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ABSTRACT

Factors which may explain differences in the level of achievement among elementary schools with similar socioeconomic status and racial composition were explored. Based on data from a statewide assessment in 1969, 25 schools were identified as having similar socioeconomic status and racial composition but significantly different levels of achievement. Various aspects of school social and social-psychological climate were assessed through questionnaires administered to fourth, fifth, and sixth grade students in each school. Factor analysis was used to reduce the number of variables. Three factors each for students and teachers accounted for most of the variance. Student factors included the student's sense of futility, and two expectation-evaluation-self-concept factors, one dealing with the present and the other with the future. Teacher factors were parallel to the student factors. (ST)

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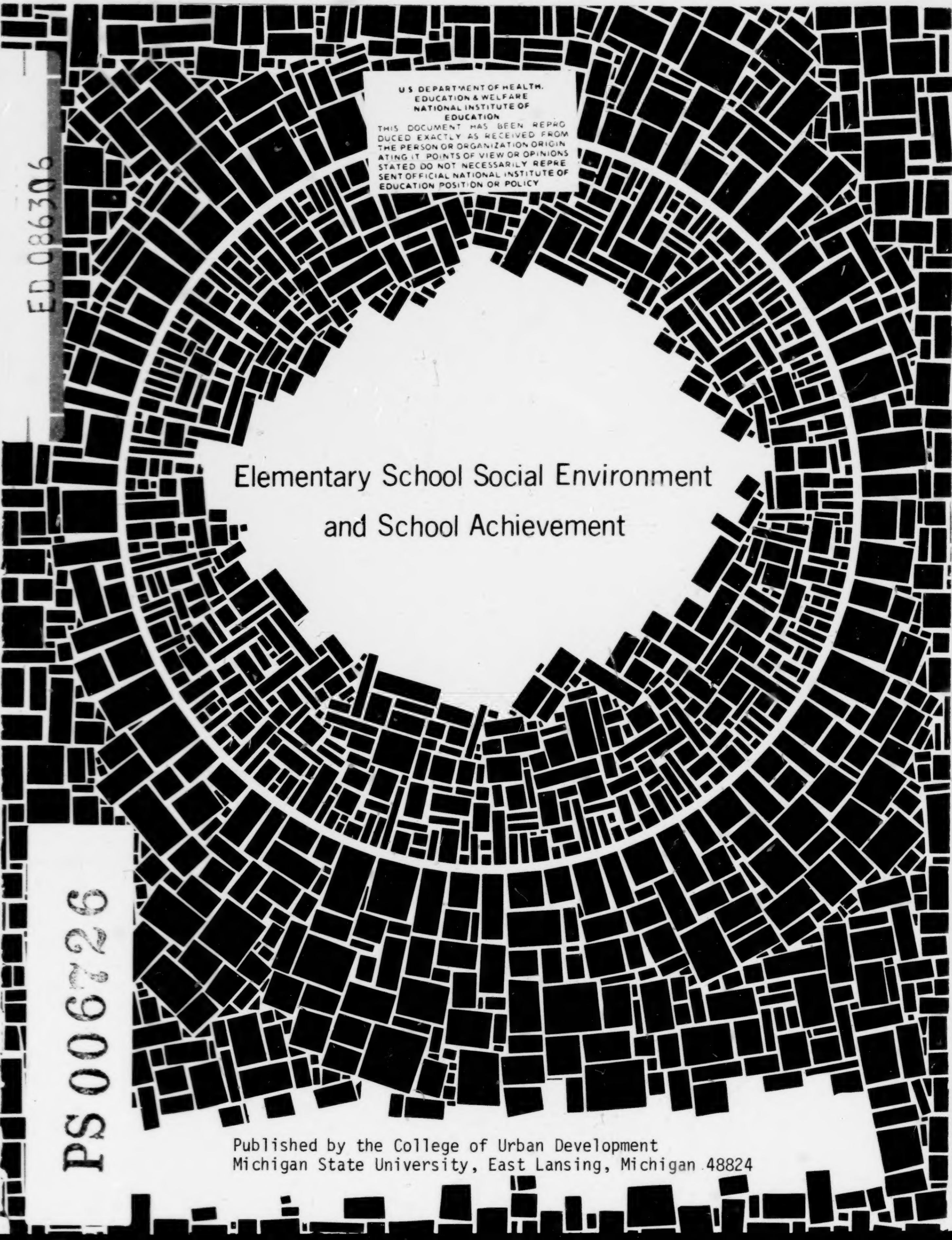

Elementary School Social Environment and School Achievement

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ELEMENTARY SCHOOL SOCIAL ENVIRONMENT AND SCHOOL ACHIEVEMENT

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of
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CHAPTER I

INTRODUCTION

Statement of the Problem

The tremendous waste of human potential within the schools of contemporary American "society" can no longer be tolerated. The day has long since past when reliance upon such educational theories as the genetic origin of intelligence or the permanent effect of environmental deprivation can be used as excuses for the failure of schools to educate large numbers of children, especially those from low socio-economic and/or culturally different backgrounds.

In recent years much attention has been given to the identification of social and social psychological factors that may account for differences in the achievement of students in American schools. A wide range of studies has demonstrated that the family's socio-economic status and racial background, as well as the socio-economic and racial composition of the school's student bodies, are correlated with both individual achievement and mean school achievement. Analysis of the recent state-wide Michigan assessment data indicates that the socio-economic and racial composition of schools are highly correlated with mean achievement scores of Michigan fourth graders and seventh graders. The correlation between school SES and mean achievement for Michigan schools is about .78. The high correlation between family background and school composition in both individual and mean school achievement, however, does not demonstrate that these variables are the cause of differences in achievement. The small number of exceptions at least suggests that a significantly higher achievement is possible in low SES schools and that significantly lower achievement sometimes occurs in high SES schools. Similar exceptions to the major regression line demonstrate that reasonably high achievement is possible in low SES black schools. The present research is an attempt to identify some factors that may explain the differences in the level of achievement among schools with similar socio-economic status and racial composition.

This research develops out of a major stream of American research on school social context in relation to school achievement and we believe contributes significantly to our knowledge of these social phenomenon. Although there has been an extensive line of studies over a period of years leading to the present research, the most comprehensive has been the analyses of the data obtained in the Equal Educational Opportunity study (Coleman et al., 1966; Mayeske, et al., 1969; Marshall Smith in Moynihan and Mosteller, 1972). All of the various analyses of this study demonstrate that family SES and racial background are significantly correlated with school achievement and that the school social composition and attitudinal variables associated with the family SES and racial background are more correlated with school achievement than any other school variables studied. Mayeske's attempt to identify the unique contribution of each of several clusters of family background and school variables indicates that these variables are highly interactive and that only a small portion can be attributed to a single set of variables. The recent examination of relevant data by Jencks and his associates also fails to adequately isolate the effects of family and socio-economic background from the effect of school social environment on achievement (Jencks et al., 1972).

In a study of 20 selected white high schools, McDill, Meyers, and Rigsby identified a series of institutional or social climate variables which accounted for most of the variance in achievement that might be attributed to the socio-economic composition of the schools (McDill et al., 1967). This study indicated that high school academic norms and related factors may account for the variance in school achievement generally attributed to social context as measured by socio-economic composition.

Our study is designed to investigate similar factors in elementary schools. Because the limited prior research has concentrated on secondary schools, the relationship between elementary school academic achievement, normative academic climate, and SES has not, thus far, been empirically established. The crucial issue is whether school social climates conducive to educational attainment characteristic of schools composed of middle-class students can be created in schools composed of students from culturally diversified backgrounds. This study thus seeks to identify social climate variables that may explain differences in achievement among elementary schools with varying socio-economic status and racial composition when the latter variables are controlled. This should greatly increase our knowledge of why schools have been failing to deal with the problem of social inequity. With this knowledge the opportunity for improving the level of achievement in elementary schools may be greatly enhanced.

Theoretical Foundations

The current study develops out of a symbolic interactionist frame of reference. It is our perspective that a student will behave in a manner which he perceives as acceptable to "other" persons who are "significant" to him. This perspective is in the tradition of George Herbert Mead (1934) who defined "self" as a phenomenon which:

> . . . arises in conduct, when the individual becomes a social object in experience to himself. This takes place when the individual assumes that attitude or uses the gesture which another individual would use and responds to it himself or tends to respond . . . The child gradually becomes a social being in his own experience, and he acts toward himself in a manner analogous to that in which he acts toward others.

The question of self-other relationship had earlier been studied by Cooley (1902) who at that time developed the concept of "the looking-glass self."

> As we see our face, figure, and dress in the glass, and are interested in them because they are ours, and pleased or otherwise with them . . . as in imagination we perceive in anothers mind some thought of our appearance, manners, aims, deeds, character, friends, and so on, and are variously affected by it. (p. 184).

Clearly under the heading of symbolic interaction and of great importance to the present research is expectation theory and the relationship between academic behavior and the student perceived academic expectations held by "others" who may be significant to his beliefs. Rosenthal and Jacobson (1968) call this phenomenon a "self-fulfilling prophecy" as coined by Merton (1957), and referred to by Myrdal (1944), as the "theory of vicious cycle." When such significant others as parents, school officials, teachers, and peers, are perceived by the individual as viewing his failure as an imminent reality, and he accepts those views, the chances are greatly enhanced that failure will follow. If any "significant other" is perceived by that individual as having more positive beliefs about the chances of academic success, the prospects of failure become diminished. Although Rosenthal and Jacobson do not identify this study of expectation effects in the interactionist frame of reference, it may be appropriately classified in this context.

Earlier researchers described the same general phenomenon. Roethlisberger and Dickson (1939) coined the term "Hawthorne Effect" to explain why people who perceive that they have been singled out for some special trait soon exhibit the characteristics which they perceive are being sought. Once again, while the "Hawthorne Effect" is an important contribution to sociological literature, it is also another example of the significance of perceived expectations and theoretically based upon symbolic interaction.

Expectation theory becomes extremely informative when we discuss the complimentary construct of "aspirations." Individuals who experience consistent negative reinforcement within a particular area will also develop limited aspirations concerning their future plans within the area of endeavor. For example, a student who is expected by "others" to be a failure and experiences some difficulty early in his education will rarely attain a high "self-concept of academic ability." His level of future educational aspirations will remain quite low.

Certain societal positions can follow the same pattern. Herriott (1963) points out that academic aspirations of boys are different than those of girls, and aspirations of children from high income families are different than those of children who come from low income homes. As Gigliotti (1972) summarized, ". . .certain aspirations may be out of the frame of legitimate reference for certain types of people. . ."

The concept of role is related to the symbolic interactionist tradition of Cooley (1902) and Mead (1934). Krech, Crutchfield, and Ballachey (1962) define role as:

> ". . . the pattern of wants and goals, beliefs, feelings, attitudes, values and actions which members of a community expect should characterize the typical occupant of a position. Roles prescribe the behaviors expected of people in standard situations. The various roles of a group are interdependent. . ." (p. 338)

Role behavior, according to these authors, like all other types of social behaviors, is a product of the interaction between those situational factors present and such social-psychological factors as ". . .cognitions, wants, attitudes, and interpersonal response traits of the individual. . ."

Gross, Mason, and McEachern (1958) have studied the question of how certain aspirations are developed among groups of people, from the perspective of role theory. Their basic thesis is that individuals who hold certain social positions (for example, a low SES student) will develop complimentary aspirations on the basis of the perceived expectations of "others."

From symbolic interaction, expectations, and role theory Brookover and Erickson, (1969) derived a social-psychological conception of learning which is the theoretical base of the present study. This conception is stated as follows:

1. The social norms and expectations of others define the appropriate behavior for persons in various social situations.
2. Each person learns the definitions of appropriate behavior through interaction with others who are important and significant to him.
3. The individual learns to behave in ways that he perceives are appropriate or proper for him.
4. The individual also acquires conceptions of his ability to learn various types of behavior through interaction with others whose evaluations are important to him.

Purpose of the Study

This study is designed to compare the school normative academic climate of high and low achieving schools of similar socio-economic status, race, and community type. The socio-economic, racial and community characteristics of the schools are controlled by identifying pairs of schools similar on these variables but with significantly different levels of academic achievement. With this design we seek to: (1) identify school social climate factors that may significantly predict the variation in mean school achievement; (2) find which factors most differentiate between high and low achievement in predominantly white-urban schools, predominantly black-urban schools, and schools located in rural communities; and (3) find if there are differences in normative academic climate between predominantly white and predominantly black schools. The basic hypotheses tested in this study may be stated as follows:

1. The social-psychological variables used as measures of elementary school normative academic climate will be positively related to mean school achievement, as measured by the Michigan State School Assessment Achievement Index, when the effects of mean student SES, racial composition, and urban-rural community type are controlled.
2. There will be differences between predominantly white-urban, predominantly black-urban, and rural elementary schools in the relationship between measures of school normative academic climate and the mean school achievement as measured by the Michigan State School Assessment Achievement Index.

The following questions will also be explored in this study:

1. Which of a number of social-psychological school normative academic climate variables derived from student and teacher reports best differentiate between higher and lower achieving predominantly white-urban elementary schools?

2. Which of a number of social-psychological school normative academic climate variables derived from student and teacher reports best differentiate between higher and lower achieving predominantly black-urban elementary schools?

3. Which of a number of social-psychological school normative academic climate variables derived from student and teacher reports best differentiate between higher and lower achieving rural elementary schools?

4. Which social-psychological school normative academic climate variables significantly contribute to the prediction of the variation between high and low achieving elementary schools when the effects of SES, race, and urban-rural community type have been controlled?

5. What portion of the variance between high and low achieving elementary schools can be predicted on the basis of social-psychological school academic climate variables?

Data for this study were obtained through the cooperation of the Michigan Department of Education State Assessment Program and the school systems involved. The data provided by the Department of Education consisted of aggregate scores of the fourth grade students for all elementary schools in the State of Michigan on both achievement as measured by a composite standardized achievement test, and SES, as measured by a questionnaire of family consumption patterns. Three questionnaires designed to identify school social climate variables were administered to students in grades four, five, and six, to teachers of those students who were surveyed, and to the principal of each school involved.

The data was collected during the 1970-71 school year from schools classified on the basis of the previous year's assessment information. The classification of schools is shown in Table 1. The 1970-71 fifth grade students whose achievement and SES data were collected in 1969-70 were the primary student sample in each school. However, a sample of the fourth and sixth grade students were included to obtain a wider range of student reports from the older students who had greater familiarity with the school normative climate.

The selection of schools studied does not permit us to generalize as to population of schools. This is a rather considerable sacrifice to generality, but the use of schools with similar social composition but with different levels of achievement enables us to focus on the school climate variable commonly associated with SES and race that may lead to differential achievement. This is not an exhaustive examination of all variables having an effect upon school achievement. It is designed rather as a heuristic investigation of a number of characteristics of school social environment which may have an association with achievement beyond the effects of social class, race, and urban-rural community type. Viewed in this way, it is our hope to use the findings in two ways; first to eliminate certain variables from consideration in future investigation, and secondly, to lend support to further research within the area of the effects of normative climate upon school achievement. The general purpose of the current investigation is to generate rather than test hypotheses.

Table 1. Classification of Schools Selected for Study

	Quality of School Performance	
Social Class and Racial Composition	High Mean Level of Achievement	Low Mean Level of Achievement
Predominantly[a] white high SES	3 schools	3 schools
Predominantly[a] white low SES	2 schools	2 schools
Predominantly[a] black high SES	1 school	2 schools
Predominantly[a] black low SES	2 schools	2 schools
Rural and small town, white high SES	1 school	1 school
Rural and small town, white low SES	3 schools	2 schools

a Predominantly = 70% or greater

Inventory of Variables

In order to investigate these questions, a wide range of data was obtained from fourth, fifth, and sixth grade students, their teachers, and principals. All questions focused on the respondents perception of the school social environment and his interaction with others in the school community. The variables are identified below and classified by the source of the data: students, teachers, and principals. Not all of the variables listed were employed for the current analysis. The items which were used are listed in Appendix F for the ten derived factors of the varimax rotation analysis and in Appendix I for the ten student scales.

Student Variables

1. Age
2. Sex
3. Grade level
4. Years at the school
5. Occupation of father
6. Self-aspiration for education
7. Reported aspirations of other students
8. Reported student press for competition
9. Importance of the self-identity or role of student
10. Academic norms of the school
11. Extra school academic behavior of friends
12. Sense of control
13. Self-concept of academic ability
14. Perceived "best friend" expectations
15. Perceived "best friend" evaluations
16. Reported teacher press for competition
17. Reported teacher demand for performance
18. Perceived teacher expectations
19. Perceived teacher evaluations
20. Perceived parental expectations
21. Perceived parental evaluations
22. Reported principal evaluations of all students
23. Reported principal expectations for all students

Teacher Variables

1. Sex
2. Years at present school
3. Years as a teacher
4. Formal preparation
5. Attitude (general) toward school before coming
6. Change in attitude since coming
7. Grouping practices across sections of grade levels
8. Grouping practices in own class
9. Reported importance of standardized tests
10. How often standardized test scores are used
11. Academic expectations for students in the school
12. Academic expectations for students in the class
13. Evaluations of academic ability of students in the school
14. Evaluations of academic ability of students in the class
15. Reported aspirations of the students in the school
16. Commitment to teaching (job satisfaction)
17. Reported principal's expectations for students in the school
18. Reported principal's evaluations of students' academic ability
19. Teacher press for educational achievement
20. Teacher demand for performance
21. Reported teacher press for student competition
22. Reported student press for competititon (whole school)
23. Reported student press for competititon (own class)
24. Reported community press for educational achievement of students
25. Reported community support for school

Principal Variables

1. Sex
2. Years as the principal of the present school
3. Years in total as a principal
4. Has the principal ever been a teacher
5. How long a teacher
6. Attitude (general) toward school before coming
7. Change in attitude since coming
8. Grouping procedure across sections of grade levels
9. Grouping procedure within sections of grade levels
10. Grouping procedures across grade levels
11. Number of teachers with a bachelor's degree; graduate degree
12. Number of teachers with provisional certificate; permanent
13. Kinds of standardized tests used in the school
14. Principal opinion of what standardized tests measure
15. Use of test results by the principal

Principal Variables - continued

16. Reported importance of standardized test scores for the teachers
17. Reported use of standardized test scores by the teachers
18. Academic expectations for students in the school
19. Evaluations of the academic ability of the students in the school
20. Reported community press for educational achievement of the students
21. Reported community support for the school

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

That school achievement is closely related to the social class and racial background of students and the composition of schools has often been demonstrated. The purpose of our study is to illuminate why this takes place. In this chapter we examine briefly some research demonstrating the relationship between achievement and school social composition. Three general explanations of this relationship are explored: heredity; early socialization; and our area of research interest, school academic climate. The literature concerned with normative academic climate is looked at in two ways: first, for different levels of education (colleges, secondary schools, and elementary schools), and second, to focus on five specific variables: expectations, norms, feelings of futility/improvability, teacher satisfaction, and community-school integration.

Relationship Between SES and Achievement

There is substantial evidence leading to the conclusion that a strong connection exists in the United States between the level of educational achievement attained by students within a particular school and the socio-economic backgrounds of their families. Informative indications of this relationship have been exhibited by Sexton (1961), Herriott and St. John (1966), Sewell and Shah (1967), and Jencks (1968).

In one of the most significant educational and sociological research endeavors of recent years, the Equality of Educational Opportunity study by James Coleman et al. (1966), using the student scores on a verbal achievement test as a measure of achievement, concluded that much of the variation in achievement among individual pupils, during their entire educational career resulted generally from family differences. Looking more closely, they found that the family differences for both black and white students most closely relating to achievement at the elementary school level were level of parental education and family income. These two areas are generally considered to be, along with occupation, the major indicators of socio-economic status.

That SES and achievement are highly interwoven was neither a very new nor a very controversial finding. Other Coleman findings, however, have significantly altered our understanding of this relationship and have also been given an extremely mixed reception by educational researchers, as well as by school administrators and teachers. He also concluded that the differences between schools accounted for only 10-30% of the variance in individual achievement of students who survive to the twelfth grade. The small amount of between school variance accounted for by such school factors as physical facilities, materials, curriculum, and staff has led some to suggest that further expenditure in time and/or in money will not achieve desired outcomes. Instead, those who advocate this position call for a change in the social class composition of the entire school, which Coleman found to be more highly related to achievement independent of the socio-economic standing of the individual student's family.

These findings lead to Coleman's major conclusion in the area of the effects of schools upon achievement:

> . . . schools bring little influence to bear on a child's achievement that is independent of his background and general social context; and that this very lack of an independent effect means that the inequalities imposed on children by their home, neighborhood, and peer environment are carried along to become the inequalities with which they confront adult life at the end of school. For equality of educational opportunity through the schools must imply a strong effect of schools that is independent of the child's immediate social environment, and that strong independent effect is not present in American schools. (1966, p. 325)

The Coleman data were re-analyzed by Mayeske (1969) using the school rather than the individual student as a unit of analysis. His findings for the greater part concur with those of the earlier analysis and he concluded that the influence of the school upon student's academic achievement could not be separated from their social class background and SES had a greater relationship with achievement over time.

Within the same general area of study, Alan B. Wilson (1969) examined the effects of social class segregation upon the achievement of 5,545 students in 11 junior and senior high schools in Richmond, California. Several rather interesting findings were derived including that academic achievement in both integrated and segregated schools was significantly affected by the social class composition of its students and that the SES of schoolmates appears to be even more important than the SES of the student neighborhood peer group not attending the same school.

Our interest is to find why this SES-race-achievement relationship exists. The focus of the present study is the relationship between normative academic climate and achievement within various social contexts, the literature for which will be reviewed in a later section. Other researchers, however, have concentrated upon different educational and social factors to explain this relationship. Two of these factors are briefly discussed: heredity, the genetic transmission of intelligence; and the inadequacies of early socialization with poor child rearing practices and/or the absence of language or sensory stimulation in lower socio-economic homes along with conflict between lower and middle-class cultures, stressing the irrelevancy of middle-class education to lower-class and/or ethnic values and life styles.

Heredity

There is nothing new about a theory of genetically transmitted intelligence. The nature-nurture controversy has a long history with large numbers of advocates regarding the hereditary transmission of intelligence as either educational fact or fiction. Genetic mental deficiency has long been applied to groups as well as to individuals as an explanation of the poorer educational records of certain racial, religious, ethnic and/or social groupings. Those who disagree with the theory of genetic group intelligence often look upon it as merely an attempt by those in power to maintain the status quo.

Most of the recent educational discussion concerning the question of genetic intelligence has revolved around the writings of Arthur Jensen (1969). The Jensen hypothesis is not an exclusively genetic theory. He believes intelligence can be divided into separate components; heredity, environment, and the interaction of these two areas. He maintains that environment acts as a "threshold variable" which under circumstances of extreme deprivation can hold a child back and that changing the environment can do no more than bring academic ability up to the individual's genetic potential. Environmental factors, Jensen contends, as measured by differences in socio-economic status ". . . are not a major independent source of variance in intelligence." (1960, p. 75) Finally, his argument concluded that the IQ difference on standardized intelligence tests between black and white Americans, as groups, is one standard deviation (15 IQ points) that to date no evidence has been produced to show that this gap in 'intellectual ability' can be equalized. . . through statistical control of environment and education."

Quite understandably, Jensen created great controversy in both academic and social circles. Much of the criticism was reviewed by Silberman (1970) who concluded that the hypothesis of genetic intelligence, as developed by Jensen, is the clearest statement of this theory published to date and because it concedes an environment/heredity interaction, it has been difficult for his critics to refute this section of the thesis.

Although the theory of hereditary intelligence does have its advocates, most modern researchers seriously question the contention that the genetic variable accounts for the difference in behavior characteristics of social class and racial strata. Many of those researchers who question the validity of genetic explanation maintain that social class differences in achievement result from early socialization practices which are discussed briefly in the next section.

Early Socialization

A good deal of research has been devoted to the area of preschool relationships between a child and his family. Many of these studies have been concerned with similarities and differences to be found in the socialization patterns of those persons who make up various socio-economic strata. Bronfenbrenner (1958) conducted a comprehensive review of the literature concerning child rearing practices in the United States from 1930 to the mid-1950s concluding that the most persistent difference which was discernible between the social classes during the period studied was that a middle class child was expected to learn to take care of himself earlier, to accept more responsibility at home, and above all to progress further in school. Many other studies have also concluded that parental values and achievement motivation vary between social classes (see Boocock, 1966; Rosen, 1956; and Kohn, 1959).

Gans (1962) and Roberts (1971) both attempted to study the possibility of dissonance in the perceptions of educational goals between school personnel and parents of various socio-economic status. Both researchers found large differences in educational values to exist between low SES parents and school administration.

Another body of literature attempts to explain the high SES-achievement correlation by concentrating on the effects of social class upon the verbal ability of children (see Nesbit, 1961; and Bernstein, 1961, 1965).

While the theory is not inconsistent with much available evidence, the effects of language upon the cognitive structure of individuals is to date unproven by empirical data (see Morrison and McIntyre, 1971). Thus, the effect of language patterns on values, behavior, or academic achievement remains a question for research.

Also attempting to explain the SES-achievement correlation, much research has been undertaken to determine the relationship between malnutrition and learning. Much of the work has used animals as subjects and has concluded that a strong negative relationship exists between malnutrition and ability to learn (Winick, 1969 and Crowley, 1968). Additional studies using human subjects reinforce the experimental findings in animals concurring that malnutrition, especially among young children, does seem to impair their ability to learn (see Winick, 1969; Stoch and Smythe, 1968; Moncheberg, 1969; Klein and Gilbert, 1967; Cravito, 1966; and Cravito and Robles, 1965).

On the basis of the evidence thus far presented, this writer would conclude that many social factors that a child brings with him to school bear a great importance in the prediction of academic success and it may thus be correct to attribute varying practices of family socialization and home environment as reason, in some part, for the achievement differential between lower and higher socio-economic children. This, however, does not explain the failure of schools to eliminate, or at least reduce, the achievement gap between groups of students. It also fails to explain why the gap actually becomes wider during the time spent in school. This study will, accordingly, concentrate upon the relationship between student learning and school factors in an attempt to help answer some of these questions. During the remainder of the present chapter, the writers will discuss the historic development of the research on school normative climate, and review the literature on the social-psychological variables of current interest.

School Climate Literature

One is faced with a lack of systematic, scientific analysis in the literature when attempting to review the topic of normative academic climate. There exists a large body of literature whose main thrust, while not a specific analysis of school normative climate, does certainly deal with the subject in an effective and revealing manner. Examples of this type of literature range from the analysis of prep school climates for the maintenance of a "societal" elite, in the classic Mills (1956) examination of The Power Elite, to the more recent popular works, designed to cast light on the poor learning conditions present in those schools whose student bodies are predominantly black and poor, Kozol (1967), and Stein (1971).

Academic interest in school social systems is by no means a new phenomenon. Still, Boocock (1966) commented that the one area where we find surprisingly little sociological research is in the study of those social factors leading to learning or the kind of teacher and type of teaching that produces the best learning results. She also contended that it is extremely difficult to measure the learning climate within any given classroom because of the confounded nature of the classroom in the school. She concluded, however, that although the research evidence was very sparse and generally limited to high school and college situations, certain interesting findings were evident:

> On the level of the whole school. . . the research evidence indicates that certain types of environments, namely those in which intellectualism and academic achievement are positively valued, are productive of learning. The trick here is to understand just what combination of individual and system characteristics produce various intellectual climates . . .

Boocock's criticism of school climate research appears to be an accurate assessment of much of the literature on the topic. We can find numerous examples (Wendel, 1970; Holland, 1969; Wallin, 1969) of education journal articles in which the author freely advocates various types of learning climates (democratic, free, open, etc.) with no empirical evidence presented that higher achievement or any other outcome will result. It has also become clear, however, that during the past decade ever increasing amounts of research time and energy have been devoted to determining the effects of various school climates on learning.

For the purposes of the present review, we will concentrate on that literature which directly purports to examine the connection between school normative climates and various educational outcomes. In the next section, we pay particular attention to that literature which characterizes the historic development of the general topic of school climate.

College and Secondary School Climate

A number of studies have concentrated upon normative educational climates of colleges and universities. Davis (1963) Pace and Stern (1958) and Stern (1964) successfully isolated particular academic and social climate values as prevailing in certain institutions. The origin of these climates is open to question, with some researchers (see Chickering, 1966 and 1967) contending that they are the result of values brought to the school by students, while others (see Newcomb and Flacks, 1964; Clark and Trow, 1966; Skager, 1966; and Austin, 1965 and 1967) have hypothesized that climates both pre-exist present student bodies and effect future student sub-cultures.

These college studies are of great interest for their contribution to our knowledge of student sub-cultures, school normative climate differences, and educational outcomes. We find, however, that these studies leave some basic questions unanswered. Any cause-effect relationship between academic climate and student personality is inconclusive. The research makes it appear likely that it is an interaction between the two which is affecting educational outcomes, but the extent of this interaction is not known. Furthermore, given the advanced age and wide range of experiences held within the samples of college students, we are unlikely to come to any specific conclusions concerning these questions by concentrating on colleges and universities.

One of the first studies of secondary school normative climates was Coleman's (1961) study of adolescent sub-cultures in ten northern Illinois high schools. He concluded that while similarities within value patterns did exist, individual schools had climates which were to some extent unique. Academic achievement might either be rewarded or punished by the peer structure, depending upon the specific environment. Punishment would result in those cases where the academic expectations for students were low and the students themselves perceived that higher achievement by a few would result in greater expectations being placed on the rest. In schools where achievement was highly valued, the "elite" received higher grades. It was Coleman's contention that once the adolescent "society" was known and understood, it could also be controlled, the resulting outcome being higher achievement.

Several other studies have dealt with secondary school academic climates and concluded that they have a significant effect upon the educational achievement of students. Among these studies were those of Walberg (1967), Wilson (1969), Goff (1969), Jones (1971), and Rousseau (1971). Of great importance to the present research, McDill, Meyers, and Rigsby (1967) studied a non-random sample of 20 high schools which included 20,345 students and 1,029 teachers in an attempt to isolate and explain the relationship between various normative high school climates and achievement patterns. Using standardized aptitude and achievement tests, supplied by Project Talent, and using schools from varying social and regional types, they hoped to find the contribution to achievement of normative climate beyond effect of the socio-economic composition of the student body.

By factor analyzing 39 school characteristic variables from students and teachers, McDill, et al., were able to interpret six factors of school climate.

1. Academic Emulation-Climate valuing academic excellence.
2. Student Perception of Intellectualism-Estheticism--Climate stressing an intrinsic value on the acquisition of knowledge.
3. Cohesive and Egalitarian Estheticism--The extent to which academic excellence is a criterion for status.

4. Scientism--Climate with a scientific emphasis

5. Humanistic Excellence--Climate press toward creation and maintenance of student interest in art, humanities, social science, and current social issues.

6. Academically Oriented Student Status System--Student bodies socially reward intellectualism and academic performance.

Their results indicated that when SES composition and intelligence are controlled, the climate effect still maintains some explanatory power in which academic achievement, intellectualism, and subject matter competence are demonstrated and emphasized by faculty and other students. Students entering a school environment will tend to adopt these scholastic norms and will have higher achievement scores. They also concluded that socio-economic status does serve as an adequate indicator of a normative climate in those school which are either very low or very high on the SES continuum. However, SES is a very poor indicator of cliamte for those schools which are not at the continuum's extremes.

The research on secondary school environments, as well as that on colleges and universities, demonstrate the existence of clearly definable normative climates within the sub-cultures of the schools studied. The secondary school research has demonstrated a relationship between academic climate and achievement. We, therefore, move on to the literature concerned with elementary school social climates in order to see if this concept can be expanded and our knowledge significantly increased.

Elementary Schools

Research on the normative academic climates within elementary schools has been neglected. Until quite recently, those attempting to comprehensively review the literature on the relationship between elementary school climates and achievement have found it sparse (see Boocock 1966 and Johnson 1970). The current study is, therefore, an attempt to rectify this situation.

Halpin and Croft (1962) attempting to devise a method of researching climates, refined their instrument, the Organizational Climate Description Questionniare (OCDQ), for an elementary school population. The theory behind the scale's design is that organizational climates are similar to the personalities of individuals. Just as individuals can have "open" or "closed" personalities, so too can schools. This instrument has, however, most often been employed to study secondary school climates.

Others have looked at differences between types of schools (Davis, 1970) finding significant differences on the OCDQ between predominantly black and predominantly white high achieving schools. Kenney and Rentz (1970) attempted to replicate the Halpin and Croft procedure on an urban sample and concluded that it was impossible to separate the internal classroom climate from the environment external to the immediate classroom affecting urban teacher perception of their schools. Much more research must be undertaken, with special emphasis upon the effect of the "open-closed" continuum upon school achievement, before we can make any conclusive statement in this area.

Of greater interest to the present analysis is a study by Sinclair (1970) of 12,000 students from 100 elementary schools. By using factor analysis he was able to articulate five school climate dimensions which, using Pace's terminology, were named: Practicality, Community, Awareness, Propriety, and Scholarship. Looking at schools, it was found that they tended to cluster around such categories as:

1. Practicality-Schools that are scholarly yet rebellious
2. Practicality-Schools that are scholarly, warm, and accepting with a higher score on politeness
3. Schools characterized by emphasis on student conformity and politeness.
4. Schools which are academically rigorous and have little concern for practicality.
5. Schools low on Scholarship and Practicality
6. Rebellious schools which are also low on awareness
7. Schools which are cold and rebellious, somewhat like jails.

A follow-up study conducted by Sadker and Sinclair (1972) identified the emergence of six very interesting new factors. These new factors were named Alienation, Humanism, Autonomy, Morale, Opportunism, and Resources.

We have thus far established that the question of why certain schools are more academically successful than are others is a highly complex problem containing many factors which must be considered. First, we reviewed some of the extensive evidence showing a close relationship between achievement and the mean socioeconomic status of the school student body. Sociological, psychological, and educational researchers have attempted to explain this relationship using several theories, three of which were touched upon in this chapter: a genetic theory of intelligence, inadequacies of early socialization along with a confrontation of values between the home and the school and, finally, a third body of research has suggested that normative academic climate may be an important causal factor in learning. The remainder of this chapter will be devoted to a presentation of the specific climate variables of interest which were used in conducting this research.

VARIABLES OF INTEREST

Although there are several attitudinal variables upon which this study and our conception of school climate is based, they are merely refinements of five basic social-psychological constructs. These five basic variables are: (a) evaluations-expectations within the social system, (b) academic norms within the social system, (c) feelings of futility/improvability within the social system, (d) teacher satisfaction, and (e) sense of community involvement within the school.

Evaluations-Expectations

One of the most important aspects of the present research lies in the study of the effects of the evaluations and expectations of various significant individuals and groups within the school environment. Specifically, this is an attempt to significantly increase our understanding of school academic climate by studying the relationship between achievement and the present and future academic evaluations and expectations of peers, parents, school personnel, and self.

There has been a good deal of both theoretical and empirical evidence maintaining the importance of peer group expectations upon the academic success of students. Parsons (1959) pointed out that peers function as an important compensatory source of non-adult acceptance and approval. Coleman (1961) in his high school study, demonstrated that values concerning such school-related functions as academics, athletics, cars, and dating were all profoundly affected by the peer sub-culture. Coleman et al. (1966) and Wilson (1969) showed that such factors as social class status, educational background and the aspiration level of the student majority have a strong association with increased achievement for disadvantaged minority students. This has led some (see Johnson, 1970) to speculate that peer influence might be an adequate substitute for those families that do not place a great emphasis upon educational achievement. Other studies have cautioned, however, that we must use care in generalizing about the effects of peer groups upon student populations. (see Seashore, 1954 and Schmuck, 1966) suggesting that such variables as group structure and cohesiveness may have important intervening effects.

The amount of parental influence over students and the significance of their evaluations and expectations upon student academic achievement has been studied by a number of researchers producing some conflicting evidence. Coleman (1961) contended that we have seen the formation of an adolescent sub-society, separate and often conflicting with that of the adult members of the community. This would negate some of the significance that parents had over student lives.

When Erickson (1967), however, looked at this question as part of the analysis of Brookover's et al. (1967) study of self-concept of academic ability, he found that (1) parental concern over student achievement was greater than that of friends, (2) this applied to both males and females, (3) parents were perceived to hold higher expectations (4) parents were also perceived to place greater importance on the beliefs concerning their child's achievement than did friends, and (5) parents were perceived to hold students under greater surveillance than were friends. This led Erickson to conclude that although peers are important "significant others" in many respects, including academic achievement, parental evaluations and expectations concerning achievement appeared to be at least as important as those of the student peer group. Lending support to the contention that parents are academic "significant others" is research by Thomas (1964), studying academic achievement for deaf students, as well as the more recent study by Coleman et al. (1966), studying equal educational opportunity.

As previously stated, significant research in the area of expectations and learning is attributable to Robert Rosenthal. Both in his study of animals (1966) as well as his highly important collaborative study (Rosenthal and Jacobson, 1968) on teacher expectations and elementary school achievement in which naive subjects were told that certain randomly chosen students were, according to new intelligence tests, about to make an educational spurt. They found that those students who had been randomly classified as higher achievers actually gained significantly more in achievement than did the control group and this gain was more pronounced in the earlier grades. This study, thus, lends credence to the hypothesis that teacher expectations have a symbiotic relationship with school achievement (input-result-feedback-input).

This study has been attacked by a number of other researchers as being methodologically incorrect (Snow, 1969), overinterpreted (Elashoff and Snow, 1971), and inadequate at identifying the teacher behavior that produces high and low achieving results (Thorndike, 1968). There have also been a number of attempts at replication of the earlier findings which have failed (Jose and Cody, 1971; Flemming and Anttonen, 1971; Claiborn, 1969; and Rubovitz and Maehr, 1971). Other researchers, however, after reanalyzing the Rosenthal and Jacobson data have concluded that the original conclusions were adequately reinforced (Gumpert and Gumpert, 1968). Still others contend that teacher expectations are an important variable to student achievement, for both pre-school children (Beez, 1967) and Air Force trainees (Schrank, 1968). These conflicting findings are, in part, the result of the great difficulty which researchers face when they attempt replications. The studies can never be exactly the same.

Knowledge of the expectation phenomenon has become so widespread within educational circles, that contamination of subjects is almost impossible to control. Finn (1972) has suggested that the reported inability of replications to achieve significance, through the experimental manipulation of subjects, may be accounted for by the inability of the experimenter to make his predictions believable to the subject. A remarkable factor involved in the Rosenthal and Jacobson experiment might actually be that teachers accepted the experimenters as their "significant others."

What is safe to presume is that teachers have varying teaching styles which closely correlate with their beliefs about the achievement ability of the students in their classes, a phenomenon which has been observed by a number of researchers (Brophy and Good, 1970; Silberman, 1969; and Rothbart, Dalfen, and Barrett, 1971). This results in the high probability that certain learning activities and results will take place to the exclusion of others. The final result being differential achievement (see Gigliotti, 1972), or at least, in teachers reacting to the responses of different students in different ways, depending upon their differing expectations (see Cornbleth, Davis, and Button, 1972; or Finn, 1972). When these expectations and the accompanying teacher behavior are based upon some social stratification groups, as race or socio-economic status, we find ourselves in the position that Brookover and Erickson (1969) describe as expectations leading to discrimination possibly through some type of individual or group tracking (see Howe, 1970;and Risk, 1970). This situation will become increasingly stronger during the years the student remains in school and help mold an achievement pattern most difficult to significantly alter.

While teachers and their expectations might be an important factor in student achievement, principals do not appear to be a direct "significant other" to students in their school (see Brookover et al., 1967). It has been demonstrated, however, in a number of studies dealing with such school matters as innovation in education (see Eichholz and Rogers, 1964; Helfiker, 1969; and Mahan, 1970), that they are "significant" to the teaching staff. Thus, if principal expectations do influence achievement, they appear to do so through mediating forces.

In order for the academic expectations of others to be an important factor in an individual's academic achievement, first these expectations must be accurately perceived, accepted, and internalized by the student. While there appears to be no evidence of what contributes "significant" characteristics to "others" (see Webster, 1969), research demonstrates that these persons can be identified by the subject. Brookover and associates (1962, 1965, and 1967) identified a student's academic "significant others" as those individuals occupying the roles of either parent, peer, or teacher. Once the student has finished the process of internalizing the expectations of his "significant others" and has a view of his own relationship to his academic environment, he has then formed his self-concept of academic ability (SCA). Brookover et al. (1967) found the correlation between SCA and actual achievement to be from .48 to .63 and when measured intelligence and socio-economic status were partialed out, the relationship between achievement and self-concept was not affected.

Johnson cites many other correlational studies that verify SCA and actual achievement are related: Bodwin (1957),Shaw (1961), and Shaw and Alvis (1963), and Bledsoe (1964). There have also been some studies which found white students to have higher SCA's than black students (see Morse, 1963) and also that SCA is an extremely high correlate of achievement for both northern and southern black students (see Epps, 1969). A large amount of recent research evidence, however, including Soares and Soares (1969), Zirkel and Moses (1971), and Rosenberg and Simmons (1971[illegible]ave concluded that black students SCA is not only higher than originally believed, but may potentially be higher than that of white students.

Academic Norms within the School Social System

Norms are present within the social system when there is common sanctioned agreement about expected behavior. Johnson (1970) cites Thibaut and Kelley's (1959) description of norms as being observable in three ways; (1) by regularity of behavior, (2) by group restoration of disturbed regularity by first appealing to the norm, or secondly by exercising the group power as enforcer of the norm, and (3) a person who regularly deviates from the norm will feel an obligation to conform through feelings of both inner conflict and guilt about his behavior.

That norms are powerful determinants of group behavior, has been demonstrated by a number of researchers (Sherif, 1936, Festinger, 1950, and Ashe, 1952). That norms either encouraging or discouraging academic performance have a strong effect upon group achievement has also been the conclusion of a number of studies. McDill, Meyers and Rigsby (1967) found that of the six factors which constituted their conception of "school climate" the academic norms factor ("academic emulation") by itself accounted for twice the explanatory power of SES when looking at achievement (see also Rigsby and McDill, 1972). Coleman (1961) demonstrated the manner in which the negative academic norms among peers serve to work against the official policy of the school environment. Wilson (1969) also discussed the relationship between norms and achievement, attempting to show how social class segregation helps in the creation of a normative environment encouraging the spread of delinquent behavior.

Existing evidence points to academic norms as a powerful achievement variable. This research work attempts to test this theory in elementary schools as well as to further knowledge of the manner in which norms actually operate in a school situation.

Feelings of Futility/Improvability

A portion of this school climate variable stems from the variable identified by Coleman et al. (1966) as "sense of control." The Equal Educational Opportunity study found that "sense of control" was a predictor of academic achievement, especially when the school was populated by members of minority groups.

A relationship between "sense of control" and social class was also found by Wilson (1969). He reported that middle-class students had both a higher "sense of control" and achieved higher than did students who had low socio-economic status. Heath (1970) studied the expressed "sense of control" of black and white junior and senior high school students finding that white students had a significantly higher "sense of control" over their environment.

The concept of "sense of control" stems, in part, from the work of Battle and Rotter (1963) who found that lower socio-economic children saw themselves as more externally controlled and less capable of determining their own destiny than did higher SES children.

Similar findings were reported by Haggstrom (1964) and Clark (1965) that in conditions of poverty, minority group status may produce feelings of powerlessness and futility.

Feelings of futility/improvability are an important variable in the present study. While knowledge of the effects of frustration upon such social-psychological constructs as self-esteen is not new (see Lewin, 1944), we are only beginning to understand its important relationship to achievement.

Teacher Satisfaction

As opposed as they were in other respects, both organizational theories, the Scientific Management and the Human Relations approach to management, assumed that the most satisfying organization would also be the most efficient (see Etzioni, 1964). When teachers belonging to educational organizations are dissatisfied, have low morale, and high feelings of alienation, we can assume that they may react in a number of ways that are counterproductive to the academic success of their students. These reactions can become apparent in such forms as placing blame on the students (see Ryan, 1971 or Brown, 1965), searching for alternate sources of satisfaction (Mandler and Watson, 1966), or becoming more excited and disorganized (Mandler and Watson, 1966). Thus, it would appear likely that a positive relationship exists between teachers feelings of satisfaction and the academic achievement of students.

The research in this area seems to justify these conclusions. Several studies have concluded that teachers are more satisfied in high achieving environments. Anderson (1953) reported that pupil achievement is related to teacher morale. Herriott and St. John (1966) also found that teacher dissatisfaction with the "sub-standard academic performance" of their pupils is a factor in the desire to resign from teaching. With the evidence of others who assert that teacher dissatisfaction is so widespread a phenomenon (see Mason, Dressel, and Bain, 1959), it appears proabable that achievement can be no more than one of a number of associated variables.

Community Integration into the School Environment

There has been a vast amount of literature in recent years discussing the positions for and against community involvment in schools, most of which is polemical rather than empirical in nature. It is a response to the poor educational conditions and consequent lack of achievement found in low socio-economic and/or minority schools (see Hamilton, 1968; Berube and Gittell, 1968; Levin, 1970). Undergirding this literature is the concept that the time has come for schools to adapt to the needs of their local community rather than the community to meet the needs of the schools (Katz, 1971). This implies the presence of a value confrontation between school and community, with students placed in the center of conflict, thus seriously and negatively affecting the school academic climate (see Gans, 1962).

Systematic empirical research of this current situation has been almost entirely neglected for a long period of time, and researchers have only begun studies of school-community integration. Up to the present, we have had a number of studies linking parental interest to achievement (Coleman, 1966; Smith and Brance, 1963; Willmon, 1969). We also have the benefit of a few studies which have even begun to approach the question of the relationship between community-school integration and student achievement. Those which have attempted to systematically study this community variable have concentrated on such indicators as school millage defeats (Crane, 1971), and community support for such school organizations as P.T.A. and community turnover (Sexton, 1961).

Thus, one of the objectives of the present study is to help fill this obvious gap in our knowledge of why some school have higher achievement than do others. To meet this task, we have separated high and low achieving schools according to socio-economic status, race, and community type, with the hope of finding systematic differences in our variables of interest.

Chapter III

PROCEDURES AND METHODOLOGY

As previously stated, the aim of the present analysis has been to analyze the differences in school normative academic climate in several pairs of elementary schools which are as closely matched as possible on both mean socio-economic status and racial composition of student bodies, while differing significantly on the dependent variable, achievement. Recognizing the relationship between SES, racial composition, and achievement, we decided that if we could control, as much as possible in a post-hoc experimental type design for the effects of SES and race, we could identify which variables best characterize the schools that deviate from the usual SES-achievement regression line, thus explain, perhaps, the differences in achievement.

Initially a national search was carried on to find matched pairs of schools meeting the criteria of the present research project. This attempt proved futile for a variety of reasons. The search for deviant school was facilitated by the initiation of the Michigan State Wide Assessment Program in 1970. Under this program, each elementary school in the state administered a battery of instruments to its fourth grade students. The battery included both a standardized achievement test and an index of socio-economic status.

The State Department of Education cooperated in this research project by providing mean school data from the elementary schools of the state, on SES, race (percent black), and achievement. In addition, it agreed to co-sponsor the project and aid in the initial contact with the various school districts. Thus, the data which made the identification and classification of schools by mean achievement and racial and SES composition were provided by the Michigan Department of Education.

Achievement Index

The standardized index of achievement, used for the selection of schools for the current study, was developed by one of the national testing agencies in cooperation with the Michigan State Assessment Program Staff. The index is a composite score of three separate achievement tests; reading, English expression, and arithmetic. Identical tests were administered to every fourth grade student in the State. The school index range for the 1970-71 school year, upon which this analysis is based, runs from approximately 37.0 to 63.0. Achievement differences for schools, which are part of an individual match-up, upon which a section of our analysis concentrated, are highly significant ($p = .001$).

SES Index

The index of socio-economic status, employed in this study for school selection, was developed by the State Assessment Board, Michigan Department of Education (see Appendix A). Its purpose is to measure differences in life style and consumption patterns which, within the social structure of the United States, are generally associated with differing SES levels. Serious charges have been leveled against the State SES Index, by a number of school districts claiming that certain items of the index did not accurately discriminate between SES levels. The basis for these charges is that although the questions might accurately determine the amount of goods in the homes of students, they do not discriminate by the age of the products, condition of the products, or the means by which the products were acquired.

It must also be pointed out, however, that consumption was only one facet of the State Socio-Economic Index. Items measuring amount of family travel, parental education, stability of the home, and the student's educational aspirations were also included. Thus, it was felt that this index constitutes the best check we currently have on school SES, and the decision was made to employ it as our initial basis of selection.

Three methods were used to further check the SES in our sample schools. First, school district officials were asked to evaluate the SES ranking which the school in question had received on the State Assessment Evaluation. Secondly, the members of the research team drove through the area encompassing the school attendance boundaries to determine if, in their opinion, the State SES Index was noticeably inaccurate. Thirdly, students were asked to state the occupation of either their father or their household's principle wage earner which was coded on the basis of the Duncan Socio-Economic Index for Occupations (Reiss, 1962 p. 263).

Those schools not satisfying the further check methods 1 and 2, were eliminated from the sample. The Duncan measurement, however, was a post hoc technique, which was not used for elimination but only as an "index of confidence" for our State of Michigan data.

Those schools selected as "match-ups" for the final sample were not always as smilar on the Duncan Index as they had been on the State data.[1] Two of the "match-ups" in particular (schools 05-06 & 15-16) appeared to have Dunca SES differences which were fairly large. It was decided, however, to retain the State Assessment as the selection criteria for the following reasons. First, the wider range of Duncan scores (2-96), which was much greater than that of the State Index for 1969-1970, upon which selection was made (of approximately 39-69), would appear to make larger differences less significant. Second, the Duncan Scale is based upon the education and income of father, with occupation as an intervening variable. At the same time, the State index includes a direct measure of education for both parents and a measurement of income, using possessions and travel as intervening variables, thus, affording a broader base upon which to decide individual classification. Third, the Duncan Index is based upon income and prestige figures current in 1950. During the ensuing years, persons in many occupations, especially those engaged in skilled "blue collar" employment, have gone through a tremendous transformation in most areas which are measures of "societal status." This is a problem which Duncan himself acknowledges (Reiss, 1962, 143-44). Fourth, the Duncan scale treats all persons engaged in a particular occupation as having equal SES, which, of course, is simply not the case. Finally, elementary school students have greater knowledge about their household goods than they do about the particular type of work in which their father is involved. This would seem to be even more apparent in low socio-economic schools. It should also be acknowledged, however, that if the two indices are not exactly alike, that they do appear to attain similar results as demonstrated by a high correlation of r - .74.

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[1] For a school by school comparison of State and Duncan scores see Appendix B

Racial Composition

School racial composition information (percentage of black and white) was compiled from school records, and recorded along with other data by

TABLE 2.--Characteristics of Schools Selected for Study: Race, S.E.S., Achievement Level, Urban - Rural Type, and Sample "N" of Students and Teachers

School	SES Level	Achievement Level	Percent White	N Students	N Teachers
01	Higher-55.1	Higher-59.6	85.0	140	6
02	Higher-55.2	Lower -48.1	100.0	173	6
03	Higher-58.2	Higher-54.4	100.0	224	9
04	Higher-54.9	Lower -47.8	100.0	202	7
05	Higher-50.1	Higher-58.0	100.0	88	3
06	Higher-49.4	Lower -43.6	97.7	67	2
07	Lower -43.2	Higher-56.7	100.0	104	4
08	Lower -44.9	Lower -44.6	100.0	88	3
09	Lower -46.6	Higher-55.1	97.7	151	6
10	Lower -46.8	Lower -43.7	95.1	81	3
11	Higher-61.3	Higher-55.1	30.0	276	6
12	Higher-52.9	Lower -47.2	01.0	406	12
13[a]	Higher-50.0	Higher-51.8			
14	Higher-49.2	Lower -37.3	00.5	149	6
15	Lower -43.8	Higher-47.2	00.8	116	6
16	Lower -46.7	Lower -38.0	13.8	105	6
17	Lower -47.0	Higher-49.6	09.5	105	4
18	Lower -46.7	Lower -39.6	05.3	384	11
19	Higher-53.2	Higher-58.1	100.0	16	2
20	Lower -44.6	Higher-58.4	100.0	13	2
21	Lower -42.9	Higher-58.2	100.0	18	1
22	Lower -44.3	Higher-60.6	87.6	55	3
23	Higher-50.7	Lower -50.2	100.0	62	3
24	Lower -47.8	Lower -45.6	100.0	40	2
25	Lower -37.8	Lower -42.5	100.0	9	1

[a] Chosen as part of the original sample, but we were not allowed to collect data.

the State Assessment Board. Criteria designating a school as either black or white was based on a student body composition of at least 70% for either race. Final figures are presented in Table 2.

The Schools Studied

The current investigation is based on data from twenty-four elementary schools located in the State of Michigan. This sample, as previously indicated, was selected non-randomly, on the basis of SES and achievement, within three strata; predominantly white schools (10), predominantly black schools (7), and rural schools (7) (see Table 1, Chapter I). Several separate analyses were applied to the data. In order to facilitate some of these, both SES and achievement were dichotomized into high and low scoring schools.

Those schools having a mean SES above 49.0 were considered to be high socio-economic schools and those below were designated as low SES schools. The cell placement for achievement, however, was somewhat more complicated. To restate our problem, the purpose of this study was not only to predict differences or differentiate between high and low achieving schools on certain variables of interest, but it was also our desire to increase our knowledge of what factors most clearly differentiate between schools which are referred to as "higher" and "lower" achieving when compared with the more usual SES achievement relationship. Thus, at times actual achievement scores are employed as the dependent variable. During other analyses, however, when we discuss "higher" and "lower" achievement, schools with lower actual achievement might have been assigned to a higher achieving strata than sampled schools with higher actual achievement, but also having higher SES. To clarify this, the following illustration is offered:

School	SES	Achievement
02	55.2	48.1
04	54.9	47.8
12	52.9	47.2
15	43.8	47.2

A comparison of the SES-achievement relationship for these, raised the distinct possibility that the similar achievement scores have different meanings in these schools, therefore, schools 02, 04, and 12 were categorized as "lower-achieving," while school 15 was categorized as "higher-achieving." With the exception of school 15, all "higher-achieving" subjects had a mean achievement score of at least 49.0.

As might be expected, finding low SES-high achieving or high SES-low achieving schools was not an easy task. This was particularly true in predominantly black schools, where only three within the State of Michigan, on the basis of fourth grade data, were achieving near or above the state mean. All three were included in the original sample drawn for the present study (13, 11, and 17). In one of these schools (13), we were refused permission to gather data. In some catagories the schools included are the only schools within the state with these particular characteristics. This accounts for the relatively small number of schools which in turn places restraints upon analysis of the data.

Data were eventually collected in 23 of the 24 schools, during the 1970-71 school year. Although this meant that the SES and achievement used for sample selection was based on the fourth grade data of the current fifth grade population, our final sample consisted of all students of each sampled school in the fifth grade and either a sample or the total fourth and sixth grades. This sample of fourth and sixth grades was obtained for several reasons. First, this gave us the ability to check if the fifth grade population was representative of the larger group within the school. Second, this wider sample constitutes the "upper grades," composed of those students in the school who could best read and understand the questionnaire, as well as those having the greatest familiarity with the school, thus better able to act as reporters of the normative climate.

One rural school closed early for the summer and was therefore, surveyed during the 1971-72 school year. Their selection was thus based on the fourth grade State Assessment results, which the sixth grade students had two years earlier. Their inclusion was allowed only after a check that the most recently available State achievement results had revealed no significant change to have taken place from one year to the next.[2]

Data were also collected from the fourth, fifth, and sixth grade teachers of the students reporting in each school. In addition, the principal of each school was interviewed. Sample sizes are included in Table 2.

Instrumentation

The instruments employed for the current analysis consisted of three separate but "interrelated" questionnaires, one each for students, teachers, and principals. All three questionnaires are interrelated in that they contain a score of similar questions designed to elicit attitudes and beliefs or perceptions of attitudes and beliefs of those individuals sampled. The original instruments were pre-tested in a moderate size industrial city, which culminated in the elimination or rephrasing of several items upon which the subjects were judged to have experienced difficulty in understanding the intended meaning.

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[2] School 25 State Assessment Achievement results, 1969-70 - 42.5; 1970-71 - 43.0.

Data Collection

Student data were collected through the use of a group administered questionnaire technique, with a trained staff of four persons administering the instrument and collecting data on the basis of one administrater per classroom. Depending upon student literacy, the questionnaire may have been read to the students in its entirely or students were asked, after a period of short instruction, to complete the instrument on a self-administered basis. This method of data collection was found to be both inexpensive and efficient.

The teacher questionnaire was self-administered. It was completed by the subject during the same time period that his or her students were completing theirs. This not only allowed the research team maximum use of time spent in the building, but also reinforced the guarantee of anonymity to the students by having their teacher out of the room.

The principal was asked to complete the instrument designed for that position, in a self-administered fashion. However, once the team completed its work with students and teachers, the principal was interviewed, asking that he explain those answers which were unclear to the research team, and requesting additional information concerning various factors about the school, which may have been noticed by a researcher, but not included in the questionnaire.

Data was collected from fourth, fifth, and sixth grade students present in the school on the day we were in the building. For a number of reasons no attempt was made to collect data from those students who were absent on the data collection day. First, the expense of having a member of the research team make a return visit to the school, to collect student data, would have been prohibitive, due to the size of our budget. Second, because of the youthful nature of our subjects, adult assistance is required for result reliability. We could not, however, have parents or school officials administer the questionnaires and still guarantee either anonymity or the validity of the results. Third, schools rather than individual students were the unit of analysis in this research.

In the case of non-response of teachers and principals, an attempt was made to secure the data. A copy of the appropriate questionnaire was left at the school, with the request that it be filled out by the missing subject and mailed to us as quickly as possible in an attached self-addressed stamped envelope. All missing teacher data were soon collected in this manner. One principal, from school 12, who failed to return the original instrument was sent another and was telephoned to serve as a reminder. Again, no response was received. Members of the research team revisited his school whereupon they were told that he had mailed the previous questionnaire and did not have the time to be interviewed. A promise was made to fill out another questionnaire and mail it as soon as possible. This one also has not been received and a further telephone call has failed to produce any positive results.

Analysis

Since our desire is to gain a greater understanding of the social environment factors related to achievement in schools of various socio-economic, racial, and community types, we have sought to describe as accurately as possible, the similarities and differences in a number of social-psychological variables among this group of elementary schools. We have, therefore, formulated several research questions and hypothesis for a systematic analysis.

Questions:

1. Which of a number of social-psychological school normative academic climate variables derived from student and teacher reports best differentiate between higher and lower achieving predominantly white-urban elementary schools?

2. Which of a number of social-psychological school normative academic climate variables derived from student and teacher reports best differentiate between higher and lower achieving predominantly black-urban elementary schools?

3. Which of a number of social-psychological school normative academic climate variables derived from student and teacher reports best differentiate between higher and lower achieving rural elementary schools?

Hypotheses:

1. The social-psychological variables used as measures of elementary school normative academic climate will be positively related to mean school achievement, as measured by the Michigan State School Assessment Achievement Index, when the effects of mean student SES, racial composition, and urban-rural community type are controlled.

2. There will be differences between predominantly white-urban, predominantly black-urban, and rural elementary schools in the relationship between measures of school normative academic climate and the mean school achievement, as measured by the Michigan State School Assessment Achievement Index.

In order to better view the relationship between school normative academic climate and academic achievement, a number of analyses were performed. Within the first analysis we attempted to define several factors as comprising school normative academic climate and by employing these factors as independent variables to find: (1) which were significant predictors of the variance in achievement for our entire sample and (2) which climate factors best differentiated between higher and lower achieving predominantly white-urban, predominantly black-urban, and rural stratified populations. To accomplish our goals this section of the analysis was divided into the following headings: factor analysis, linear regression analysis, and discrimiant function analysis.

The second stage of the analysis entailed a comparative investigation of school mean scores on both scaled student items and student factor scores for predominantly white-urban and predominantly black-urban schools. Our intent was: (1) to compile an inventory of differences between black and white schools on these measures; and (2) to suggest inferences about the achievement gap between white and black schools. Statistical treatment for this investigation was a multivariate analysis of variance. Rationale for its usage was based upon the fact that when psychologically interrelated measures are examined, multivariate analysis is more powerful and appropriate than multiple univariate tests.

The final procedure is best described as an analysis of the normative academic climate effects upon achievement of individual cases, pairs of cases, and groups of cases. Within this chapter, we will use both our significant and non-significant factor scores to help explain achievement patterns of individual schools, as well as achievement differences for schools which have been matched on our three design variables. We will also report the intuitive impressions of our observations of the sampled school, the informal and formal reports of those familiar with the climate of the sampled schools, and any other beliefs concerning the sample which have a relationship to normative achievement climate, but about which we do not have any systematic empirical data.

The usual nature of our sample should be noted in consideration of the analyses presented in Chapters IV, V, and VI as should the difficulties in finding significant relationships when the sample size is small. It should also be understood that much of the analysis presented in Chapter VI, the comparative Observation of Schools, is of a highly speculative nature.

CHAPTER IV

FACTOR ANALYSIS, LINEAR REGRESSION ANALYSIS AND DISCRIMINANT FUNCTION ANALYSIS

The analysis presented in this chapter is descriptive. The techniques employed identify the school climate variables which are significant predictors of mean school achievement for all schools studied and the variables which differentiate between higher and lower achieving schools within predominantly white-urban, predominantly black-urban, and rural strata. The analysis is presented under three major headings: factor analysis, employed to establish independent variables; linear regression analysis; and discriminant function analysis.

Factor Analysis

For the present analysis, three separate varimax rotation factor analyses were performed. The first factor analysis was applied to 63 attitudinal items from the student questionnaire, forming factors on the basis of the responses of students considered as individuals, rather than treating students as nested within certain schools. Only those students who had no missing data had their responses factor analyzed. This dropped the number of subjects upon whom the factors are based from 3073 to 2188. The four factors which emerged from the student data were identified as: (1) student perceptions of the present evaluations-expectations in their school social system; (2) student perceptions of the future evaluations-expectations in their school social system; (3) student perceptions of feelings of futility permeating the social system of the school; and (4) student perceptions of the norms stressing academic achievement in their school and social system.

Factor 1. Student Perceived Present Evaluations-Expectations (SPPEE)[1]

The evaluations-expectations variables are divided into two separate school climate factors on the basis of the four factor varimax factor analysis. High loading into the first of these variables were those items which concentrated upon the expectations and evaluations of "others" (parents, teachers, friends), as well as the students own "self-concept of academic ability" from the present through the completion of high school.

Factor 2. Student Perceived Future Evaluations-Expectations (SPFEE)

The second evaluations-expectations factor dealt with student perceptions of the beliefs of "others" (parents, teachers, friends) concerning the subject's chances of future academic accomplishments. Also loading highly on this factor were items reporting the student's "self-concept of academic ability" and self-evaluation in the future. More specifically, the high load items within this factor are those items reporting beliefs and perceptions about college attendance and success.

Factor 3. Student Reported Sense of Futility (SRSOF)

One important set of items in this factor are similar to the personal "sense of control" questions used by Coleman (1966). There are several additional items, however, which are highly intercorrelated and thus, loaded highly on SRSOF. These items dealt with student perceptions of teachers, and to a lesser extent of other students, feelings of hopelessness or lack of caring about their academic achievement.

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[1] The items which make up each factor and the loading on each are shown in Appendix C.

Factor 4. Student Perception of School Academic Norms (SPSAN)

Items loading high in the last student factor were those assessing the student perceptions about the amount of pressure placed upon achievement by members of the school social system and school bureaucracy. Within this factor the student perception concerning the evaluations-expectations of their principal appear to be intricately interwoven into the general normative academic push of the school environment. Other variables which have combined to form SPSAN were items designed to measure the amount of student perceived competition-cooperation within the environment as well as the reported and perceived importance of the student role.

A second varimax rotation factor analysis was run on the basis of the inner correlations of 49 items from the teacher questionnaire. The procedure employed was exactly the same as that used in the analysis of the student data. The subjects (teachers) were treated as individual respondents rather than using school mean scores of items as a basis for factoring.

From the teacher responses, six interpretable factors emerged. These factors were identified as: (1) teacher present evaluations-expectations; (2) teacher future evaluations-expectations; (3) teacher perceptions of parent-student push for educational achievement; (4) teacher reported push of individual students; (5) teacher reported job satisfaction; and (6) teacher perceptions of the social system belief in student improvability.

Factor 5. Teacher Present Evaluation-Expectation of Student in their School (TPEE)

Just as in the student factor analysis, two separate evaluation-expectation factors emerged; those items having a predominantly present and those having a predominantly future orientation. More specifically, items forming TPEE are those which pertain to teacher evaluations-expectations of students from the immediate present and continuing through high school.

Factor 6. Teacher Future Evaluation-Expectation of the Students in their School (TFEE)

Factor Six is the future dimension of Factor Five. Most items are concerned with teachers' evaluations and expectations about their students future academic role; specifically with the possibility of the students gaining entrance into and finding success in college. The remaining high load items are of a more general evaluation-expectation nature with the teacher both reporting for himself and giving his perceptions of the beliefs held by the school principal.

Factor 7. Teacher Perception of Parent-Student Push for Educational Achievement (TPPSP)

Those items which loaded highly on this factor were those which pertained to the amount of academic push which the teachers perceived to be coming from sources other than school personnel. This, of course, appears to be closely interwoven with those questions designed to assess the perceptions of teachers about the educational values which were held within the homes of the students attending their schools. Also important high loading items on this factor are items dealing with student norms, stressing the desire for individual competition.

Factor 8. Teachers Reported Push of Individual Students (TRPIS)

This factor has fewer high loaded items (4) than the others which we have discussed thus far. The items comprising this factor were designed to measure the amount of push that teachers were willing to exert upon individual students in order to encourage performance greater than the teacher expectations.

Factor 9. Teacher Reported Feelings of Job Satisfaction (TRFJS)

This factor emerging from our factor analysis consisted of only three highly loaded items designed to assess the degree of teacher satisfaction with his present school and teaching in general.

Factor 10. Teacher Perception of Student Academic Improvability (TPSAI)

The last factor to emerge was based upon items which were designed to report teacher perceptions of individuals belonging to the school social system and their positive or negative beliefs that past academic failure could be overcome. Specifically, this factor attempts to assess the belief within the school social system that appropriate behavior will result in improved student academic performance.

The limited number of principal subjects made the task of finding stable interpretable factors from the 13 principal attitudinal items unfeasible. The factors which seemed to emerge suggested three areas: present evaluations-expectations, future evaluations-expectations, and parent school contact but the emergent factors did not provide an adequate basis for identification as independent variables.

LINEAR REGRESSION ANALYSIS ON ACHIEVEMENT

Linear regression analysis is used to predict mean school achievement from the 10 factors described above in the 24 schools from which data were obtained. Since this analysis is exploratory and descriptive with a small number of schools and thus few degrees of freedom, we have used $\alpha = .10$ as the level of significance. Our objective was to identify possible differences between schools so we decided it was better to accept a variable as significant when it was not than to mistakingly eliminate any independent variables that might warrant further study. We use this and other statistical analyses with the caution that the findings should not be generalized too broadly.

The specific procedure used was a least square add linear regression analysis applied to the mean scores of each of the 10 student and teacher factors for all 24 schools. That portion of the variance in mean school achievement accounted for by the social context factors of SES, race, and urban-rural community type was eliminated before the variance accounted for by the 10 normative climate factors was calculated. These demographic factors were controlled by placing them into the regression equasion first. The result of this analysis are presented in Table 3.

Our selection of schools limited the effects of the social context variables upon achievement so that they accounted for less of the variance in achievement than is normally the case. This analysis clearly demonstrates that by far the most important climate variable within our sample of schools is the students' reported sense of futility ($p<0.0005$). That part of SRSOF not in common with the social context

Table 3. Findings of Least Square Add Linear Regression Analysis for Achievement

Variable	R	R^2	Prob.	% Added to the Prediction of Achievement	Significance of β
SES, Race and Urban-Rural Interaction	0.5056	0.2556	0.109		
Student Sense of Futility	0.8395	0.7048	0.0005	.4492	<0.0005
Teacher Future Evaluations-Expectations	0.8962	0.8031	0.008	.0983	<0.0005
Teacher Reported Push Individual Students	0.9225	0.8559	0.023	.0528	<0.0005
Student Present Evaluations-Expectations	0.9418	0.8995	0.052	.0336	<0.0005
Teacher Present Evaluations-Expectations			0.191		

Table 4. Findings of Least Square Add Linear Regression Analysis for Sense of Futility

Variable	R	R^2	Prob.	% Added to the Prediction of Sense of Futility	Significance of β
SES, Race, and Urban-Rural Interaction	0.6320	0.3994	0.015		
Teacher Present Evaluations-Expectations	0.8069	0.6511	0.002	.2517	<0.0005
Student Perceived School Academic Norms	0.8569	0.7343	0.029	.0832	<0.0005
Student Present Evaluations-Expectations	0.8906	0.8147	0.042	.0804	<0.0005
Teacher Perceived Student Academic Improvability			0.192		

variables accounts for 44.9% of the variance in mean school achievement. Other variables significantly contributing to the variance in school achievement were: teacher perceived future evaluations-expectations (p=.008), teacher reported need to push individual students (p=.023), and student perceived present evaluations-expectations (p=.052). These four climate variables predicted slightly over 63% of the variation in mean achievement of the 24 schools. Thus, significant differences in social-psychological climate factors do exist between high and low achieving schools when the effects of SES, race, and urban-rural community type are controlled.

Linear Regression Analysis on Sense of Futility

As a consequence of the observed strength of the predictive ability of students' reported sense of futility, we analyzed the contribution of the other nine factors to its variance after the effects of SES, race and urban-rural community type were removed. Table 4 presents the findings from this analysis.

It appears that over 41% of the variation in sense of futility among our sampled schools is accounted for by three other normative academic climate factors. First, a low reported sense of futility is found in those schools which also have a high teacher present evaluation-expectation (p=.002). Second, schools in which students report lower sense of futility also have a perception of more positive school environmental stress on norms of academic achievement (p=.029). Third, there exists high student perceptions of the present evaluations-expectations of student achievement. Although not significant, it is worth noting that for the first time there is evidence of the possible importance of teacher perceptions of the beliefs that student academic achievement can be improved within the school social system. More will be said concerning this variable in subsequent analysis.

This analysis adds further weight that high and low achieving schools can be differentiated by school social climate as measured by the social-psychological factors indentified. Sense of futility which accounts for much of the variance in mean achievement in turn varies with the teachers present evaluations and expectations and the value placed upon academic achievement by the students.

DISCRIMINANT FUNCTION ANALYSIS

We utilized discriminant function analysis to determine which school climate factors best differentiate between higher and lower achieving schools within each social context stratum. As in the case of the least square add linear regression analysis, the independent variables employed for the discriminant function analysis consisted of those student and teacher factors arrived at through the use of a varimax rotation factor analysis. In the discriminant function analysis, schools were assigned to higher and lower achieving categories on the basis of their students' mean achievement in comparison with schools having similar SES index scores. Their placement into higher and lower achieving categories also depended on their classification as predominantly white-urban schools, predominantly black-urban schools, or schools located within rural communities.

The three racial and community type strata were analyzed separately allowing for both control of their effect and strata comparisons in the relationships of the independent variables to the dependent variable, achievement. The small number of schools made it impossible to control for school mean SES within any given strata or to consider all independent variables accumulatively at any one time. Therefore, the four student climate factors were analyzed as one group and the six teacher factors were divided into two groups of three factors each. The two divisions of teacher factors were determined on the basis of their strength of correlation with achievement.[1] The three factors having the highest correlation to achievement formed one group while those having the least correlation formed the other. The three groups of variables used to discriminate between high and low achieving groups of schools were:

Group 1

1.	Student's Perceived Present Evaluations-Expect.	(SPPEE)
2.	Students' Perceived Future Evaluations-Expectation	(SPFEE)
3.	Students' Reported Sense of Futility	(SRSOF)
4.	Students' Perceptions of School's Academic Norms	(SPSAN)

Group 2

1.	Teacher Present Evaluations-Expectations	(TPEE)
2.	Teacher Future Evaluations-Expectations	(TFEE)
3.	Teacher Reported Push Individual Students	(TRPIS)

Group 3

1.	Teacher Perceptions of Parent-Student Push for Achievement	(TPPSP)
2.	Teacher Reported Job Satisfaction	(TRFJS)
3.	Teacher Perceptions of Student Improvability	(TPSAI)

By analyzing the three strata (rural, urban-white, and urban-black) separately, we were able to control for their effects. The small number of schools make it impossible to analyze high and low SES strata separately, but this is not a serious handicap in this population of schools. The least square add linear regression analysis found the effect of mean school SES on mean achievement to be relatively small.

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[1] For factor correlation matrix see Appendix D.

All the design variables together, including SES, accounted for only 25.5% of the variation in achievement. Only a portion of this can be attributed to SES difference because of the SES divisions between higher and lower achieving schools within the three strata. This is shown in Table 5.

Table 5. Placement of High and Low SES Schools by Achievement Within Strata

Race & Community	SES	High Ach.	Low Ach.
Predominantly White-Urban	High	3	3
	Low	2	2
Total Number of Schools in Strata=10			
Predominantly Black-Urban	High	1	2
	Low	2	2
Total Number of Schools in Strata=7			
Rural Schools	High	1	1
	Low	3	2
Total Number of Schools in Strata=7			

Our desire in this analysis was to gauge the relative amount of discriminatory power possessed by each of the 10 independent variables between higher and lower achieving schools within the three composition. To accomplish this, a single vector of standardized scores was produced which weighted the contribution of each variable to differences in mean student achievement. Bartlett's chi square test for significance was calculated for each variable group within each stratum.

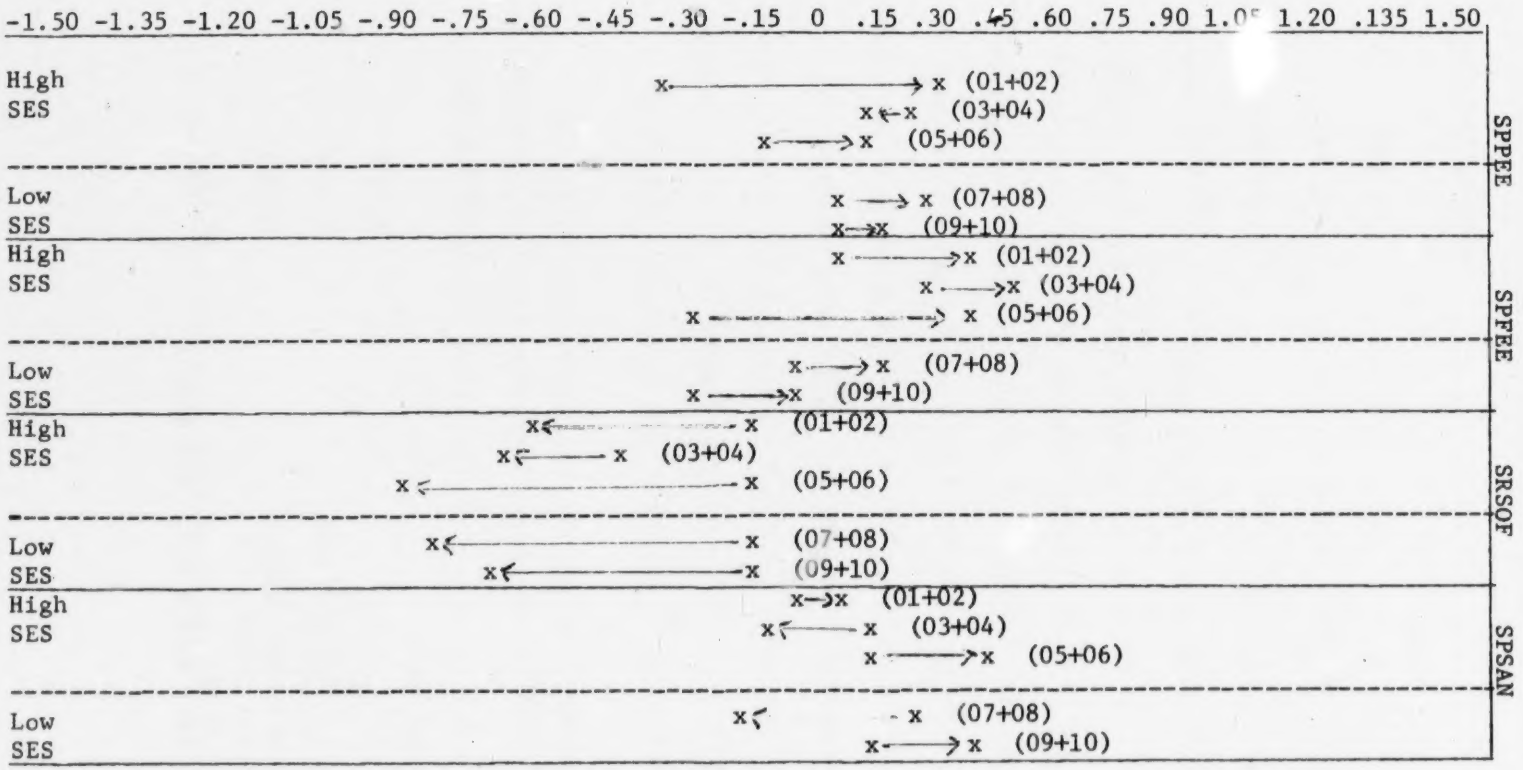
The analysis as shown in Table 6 indicates that the student variables do significantly distinguish between higher and lower achieving schools among the predominantly white-urban schools. Although no arbitrary figure was decided upon to determine if a particular variable was or was not differentiating between the two achievement groups, examination of the absolute values of the standardized scores indicates that the student reported sense of futility and perceived academic norms have a higher differentiating power than do perceived future or perceived present evaluations-expectations. Figure 1 provides a graphic representation of the manner in which these student variables differentiate higher and lower achievement in predominatly white-urban schools matched on SES.

Table 6. Discriminant Function Analysis of Student Variables in Predominantly White-Urban School

Student Variables	Standardized Score
1. Student Reported Sense of Futility	-1.4380
2. Student Perceived School Academic Norms	-0.8161
3. Student Perceived Future Evaluations-Expectations	-0.3931
4. Student Perceived Present Evaluations-Expectations	0.1201

Bartlett's X^2=11.7547 with 4 d.f. $p<0.0193$

Although the standardized scores shown in Table 7 are higher in the black-urban stratum than they were in the white-urban group, these variables did not significantly differentiate between higher and lower achieving schools. This may have been the result of: (1) our small sample size within the two achievement groups in predominantly black-urban schools, (2) there may not have been a large enough range for independent variables within predominantly black-urban schools to differentiate achievement groups, or (3) there may be no actual difference for these variables within the strata. If we assume that



Note: Arrows point toward higher achieving school.

Figure 1. Mean School Student Factor Scores of Matched Pairs of School for Predominantly White-Urban Schools

Table 7. Discriminant Function Analysis of Student Variables
Predominantly Black Urban Schools

Student Variables	Standardized Score
1. Student Reported Sense of Futility	-1.8251
2. Student Perceived Future Evaluations-Expectations	-0.8427
3. Student Perceived Present Evaluations-Expectations	0.7493
4. Student Perceived School Academic Norms	-0.2537

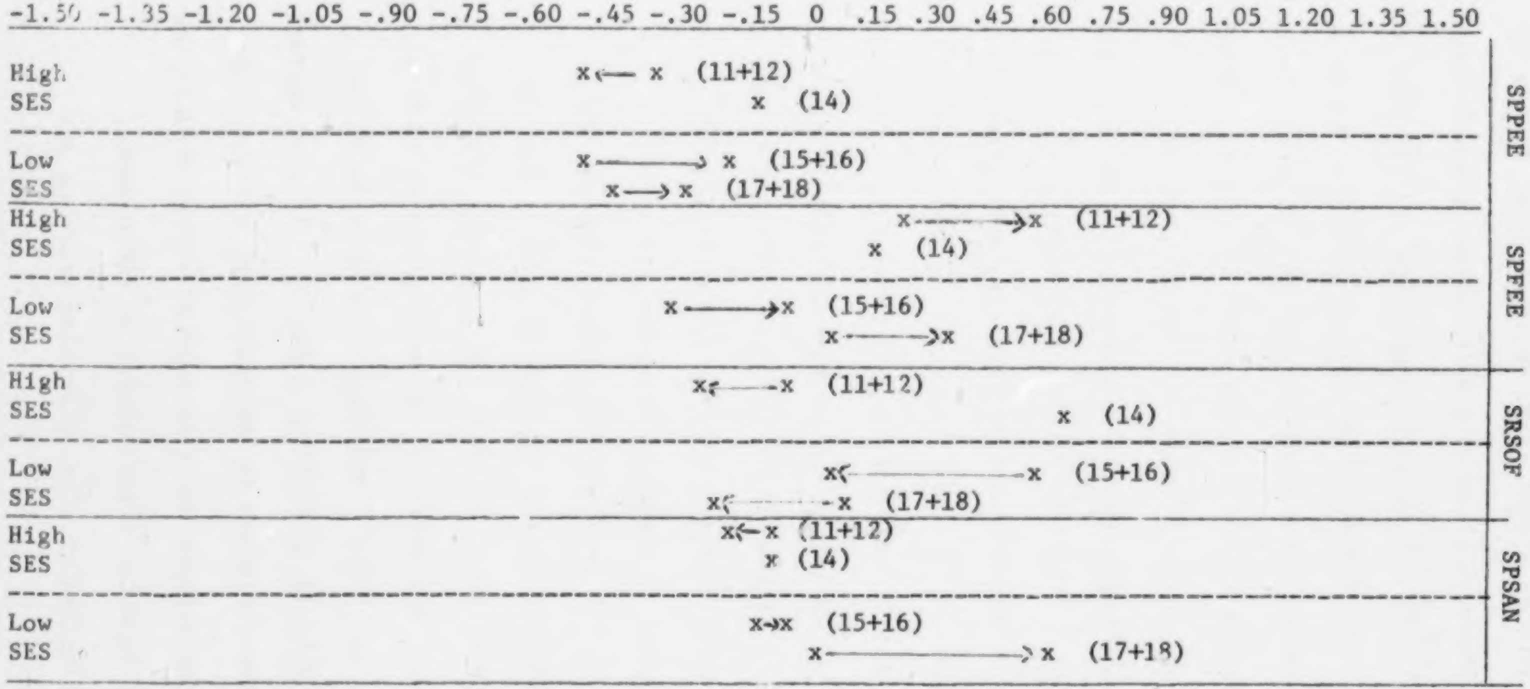
Bartlett's $X^2 = 3.3035$ with 4 d.f. $P<0.5084$

the variable order in the size of standard scores has some meaning, we may cautiously note that student reported sense of futility is by far the most important discriminator of achievement differences with student future and present expectations discriminating at a much lower level. Unlike in the predominantly white urban schools, student perceived school academic norms do not appear to be an important discriminating factor among the black schools. For a graphic representation of these variables, differentiating higher and lower achieving predominantly black urban schools matched on SES, see Figure 2.

Table 8. Discriminant Function Analysis of Student Variables
Rural Schools

Student Variables	Standardized Score
1. Student Reported Sense of Futility	2.7984
2. Student Perceived Present Evaluations-Expectations	2.7488
3. Student Perceived Future Evaluations-Expectations	1.3009
4. Student Perceived School Academic Norms	-0.6251

Bartlett's $X^2 = 5.4964$ with 4 d.f. $P<0.2401$

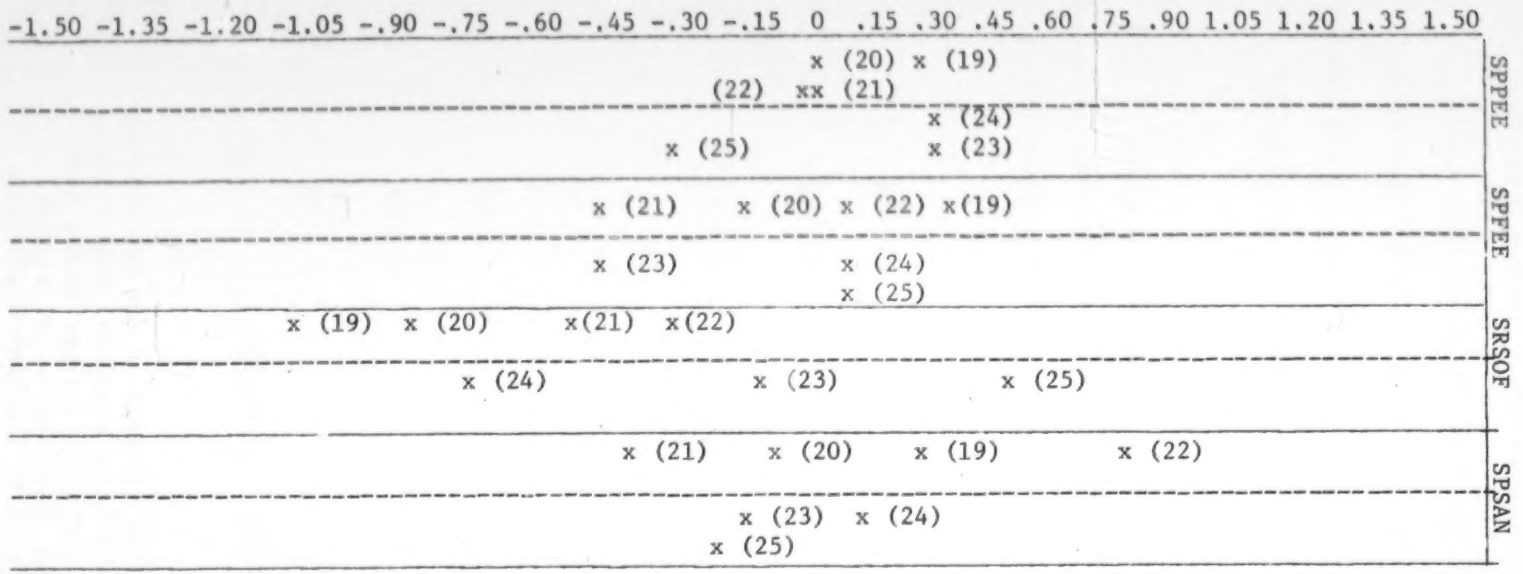


Note: Arrows point toward higher achieving school

Figure 2. Mean School Student Factor Scores of Matched Pairs of Schools for Predominantly Black-Urban Schools

Although the standardized scores shown in Table 8 are higher for rural schools than for those in either the white-urban or black-urban stratum, the probability does not indicate significant differences in this group of schools. The reasons stated for our failure to find significance in predominantly black-urban schools may apply here also. A comparison of the absolute scores with the other two strata, however, presents some interesting results. Again we find student reported sense of futility to be the most important discriminator of the group but not by nearly so wide a margin as in the other strata. Student perceived present evaluations-expectations were almost as strong in differentiating achievement. The consistent finding that sense of futility is the most likely discriminate in all categories of schools, along with the regression analysis gives us some confidence that this factor is significantly different in low and high achieving schools. For a graphic representation of these variables differentiating higher and lower achievement in rural schools, see Figure 3.

The discriminant function analysis of teacher variables was designed so that the variables having the highest correlation with achievement were assigned to Group I, while the remaining variables were assigned to Group II. Therefore, it is not surprising that we find strong significance for Group I and very low significance for Group II in white-urban schools as shown in Table 9 It also appears that in Group I, the three variables in combination do differentiate higher and lower achieving schools and that teacher future evaluations-expectations is the most powerful discriminator of achievement, followed by teacher willingness to push individual students and



Note: Broken line separates higher and lower achieving schools.

Figure 3. Mean School Student Factor Scores for Rural Schools

and teachers present evaluations-expectations.[1] On the other hand, in Group II, it appears that the only variable which might deserve further consideration is the teacher perceived parent-student push for educational achievement. For graphic representation of the teacher variables differentiating lower and higher achieving predominantly white-urban schools matched on SES, see Figure 4.

Table 9. Discriminant Function Analysis of Teacher Variables Predominantly White-Urban Schools

Teacher Variables	Standardized Scores
Group I	
1. Teacher Future Evaluations-Expectations	0.9072
2. Teacher Reported Push of Individual Students	-0.7882
3. Teacher Present Evaluations-Expectations	0.6007
Bartlett's $X^2 = 13.4731$ with 3 d.f. $P<0.0038$	
Group II	
1. Teacher Perception of Parent-Student Push for Educational Achievement	-1.2284
2. Teacher Reported Feelings of Job Satisfaction	-0.8868
3. Teacher Perception of Student Academic Improvability	0.1550
Bartlett's $X^2 = 0.6392$ with 3 d.f. $P<0.8875$	

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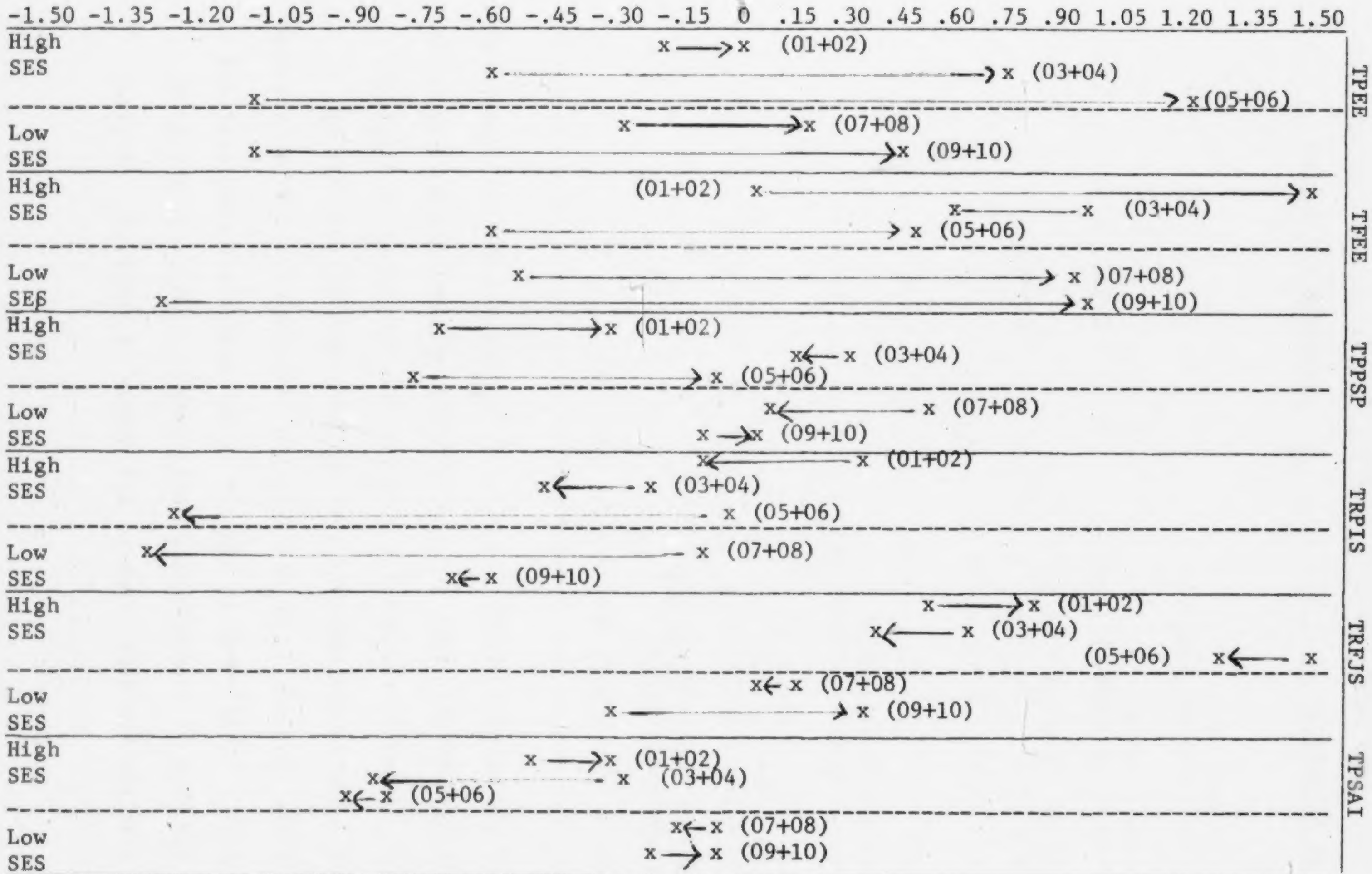
[1] This is consistent with an earlier analysis of the white-urban sample (see Gigliotti,1972) which found generally high teacher expectations and low press for competition along with a high student sense of control and high self-concept of academic ability to be significantly related to the higher achieving schools.



Note: Arrows point toward higher achieving school.

Figure 4. Mean School Teacher Factor Scores of Matched Pairs of Schools for Predominantly White-Urban Schools

Table 10. Discriminant Function Analysis of Teacher Variables Predominantly Black-Urban Schools

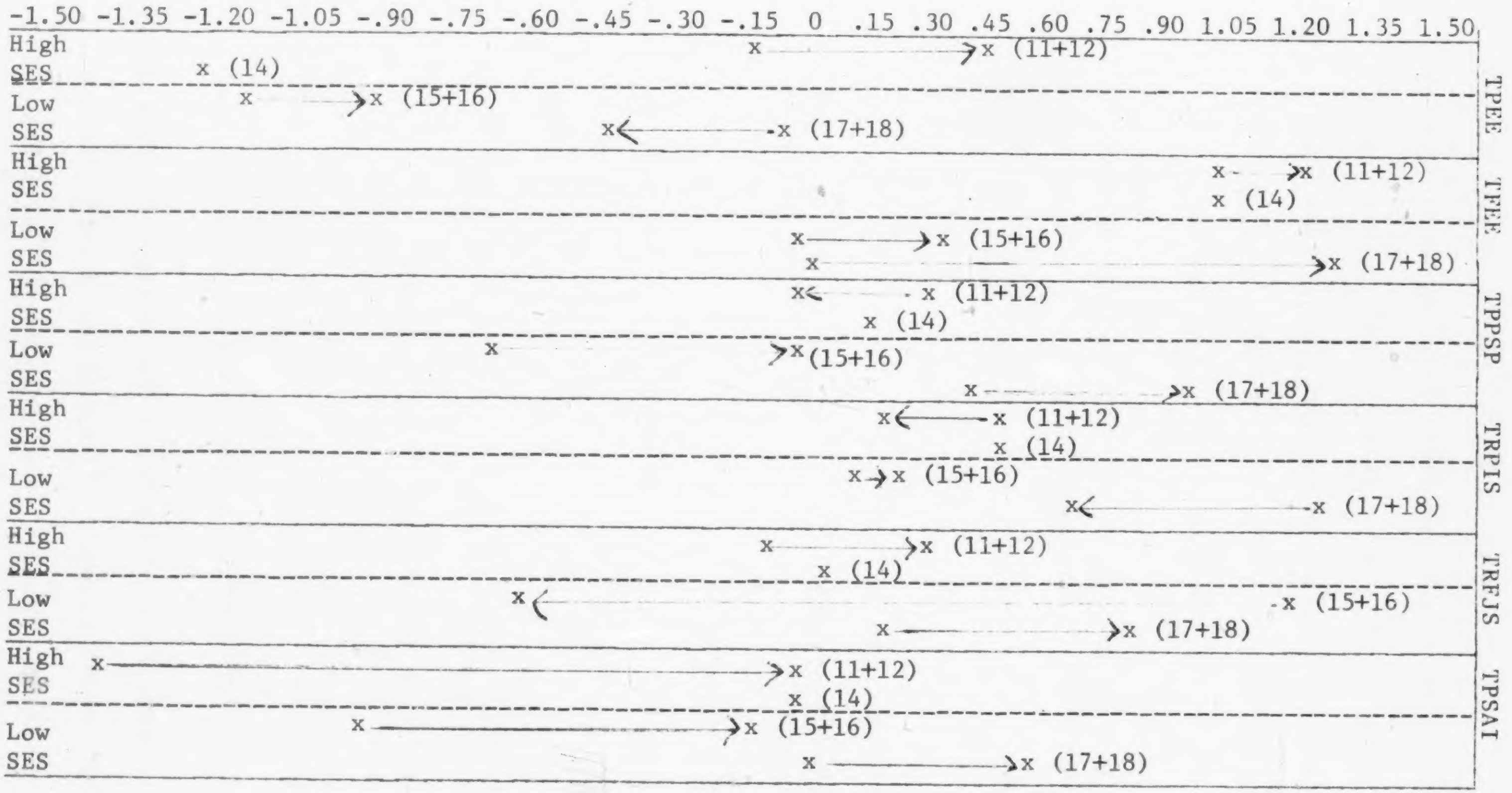
Teacher Variables	Standardized Scores
Group I	
1. Teacher Future Evaluations-Expectations	0.7248
2. Teacher Present Evaluations-Expectations	0.5348
3. Teacher Reported Push of Individual Students	-0.5178
Bartlett's $X^2 = 1.6251$ with 3 d.f. $P<0.6538$	
Group II	
1. Teacher Perception of Student Academic Improvability	1.3844
2. Teacher Perception of Parent-Student Push for Educational Achievement	-0.9390
3. Teacher Reported Feelings of Job Satisfaction	0.0924
Bartlett's $X^2 = 1.9177$ with 3 d.f. $P<0.5897$	

As indicated in Table 10, the teacher factors did not significantly discriminate between high and low achieving predominantly black-urban schools. Possible reasons for this are the same as those discussed earlier. Cautiously assuming that our standardized rankings are meaningful, in Group I, we see that the most powerful differentiating variable for achievement is teacher future evaluations-expectations as in the case of predominantly white-urban schools. It should be noted that the two other factors are nearly as powerful. Of great interest in Group II is the manner in which teacher perceptions of student improvability becomes an important disciminator of achievement within this stratum. The importance of this variable to this stratum becomes apparent when we compare the graphic representation of mean scores on teacher variables for schools matched on SES in white-urban (Figure 4) and black-urban (Figure 5) schools.

Table 11. Discriminant Function Analysis of Teacher Variables in Rural Schools

Teacher Variables	Standardized Scores
Group I	
1. Teacher Future Evaluations-Expectations	2.8591
2. Teacher Reported Push of Individual Students	-2.7232
3. Teacher Present Evaluations-Expectations	1.4475
Bartlett's $X^2 = 7.4465$ with 3 d.f. $P<0.0590$	
Group II	
1. Teacher Perception of Parent-Student Push for Educational Achievement	1.3844
2. Teacher Perception of Student Academic Improvability	-0.9390
3. Teacher Reported Feelings of Job Satisfaction	0.0924
Bartlett's $X^2 = 2.4575$ with 3 d.f. $P<0.4831$	

In the rural sample as in the white-urban sample, the first group of teacher variables shown in Table 11 significantly differentiate higher and lower achieving schools. The most powerful variables of these groups are teacher future evaluations-expectations and their

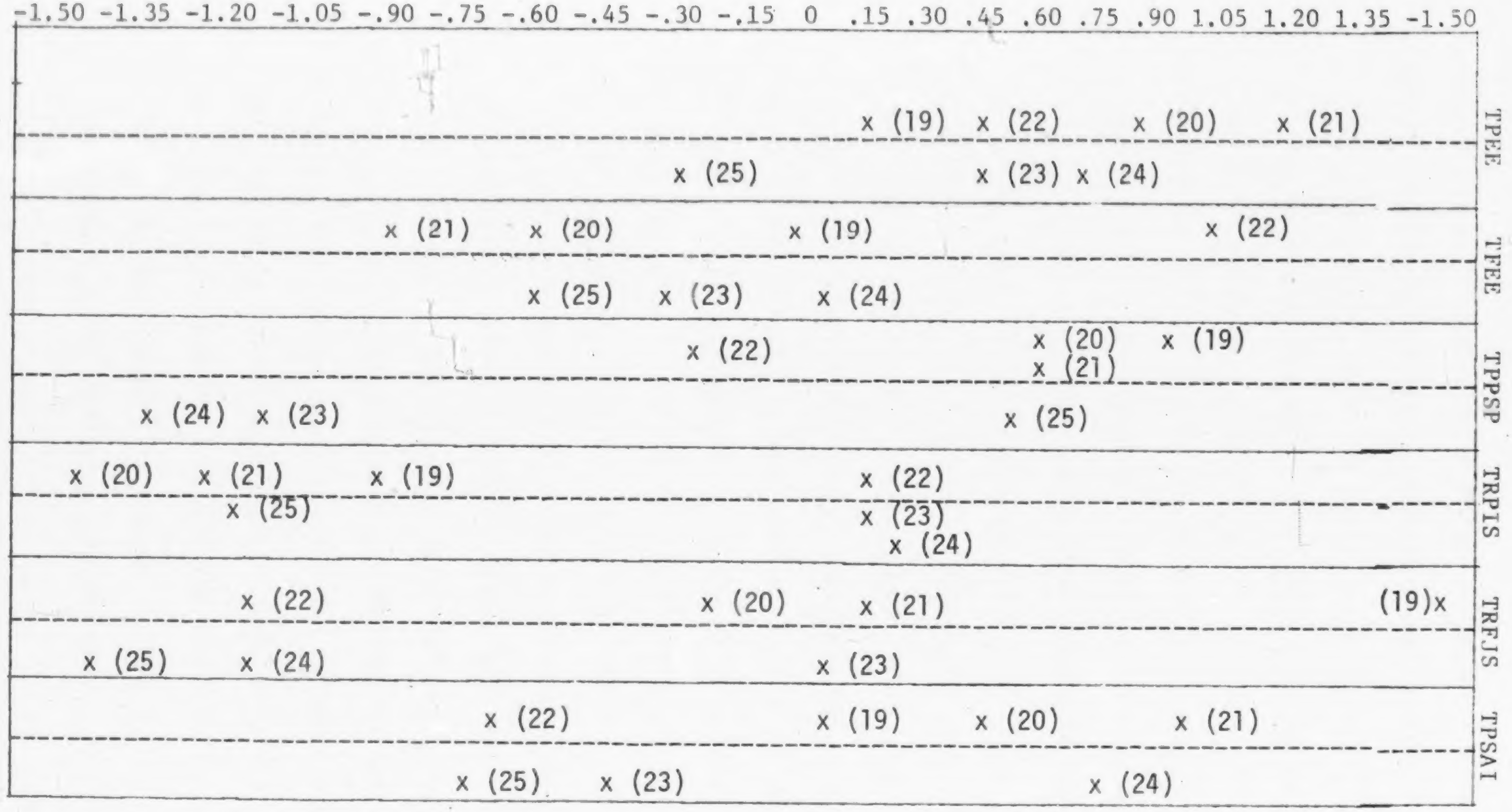


Note: Arrows point toward high achieving school.

Figure 5. Mean School Teacher Factor Scores of Matched Pairs of Schools for Predominantly Black-Urban Schools.

wiliingness to push individual students. Although not as strongly, teachers present evaluations-expectations also discriminates between high and low achieving schools. Of the three variables in the second group, only perceived parent-teacher push for educational achievement, and to a lesser extent, feelings of student improvability should be given further consideration and with only the greatest of caution. For a graphic representation of the teacher variables in lower and higher achieving rural schools see Figure 6.

As a consequence of discriminate function analyses, several observations are made. First, we can generally conclude that the results of the discriminate function analyses are in accord with the conclusions of our least square add linear regression analyses. Student perceived sense of futility, teacher perceptions of future evaluations-expectations, and teacher willingness to push individual students are fairly consistent discriminators of achievement within all three strata. The fourth significant variable within the linear regression analysis, students' present evaluations-expectations, although not very powerful in white-urban schools, discriminated between higher and lower achieving rural schools. Students' perceived norms, while insignificant in the regression analysis on school achievement levels, was a significant predictor of sense of futility and more highly discriminated achievement in white-urban than in black-urban or rural schools. All of this, of course, must be tempered by the probability of chance findings for the black-urban sample as well as for certain variables in the white-urban and rural samples.



Note: Above broken line is higher achieving school.

Figure 6. Mean School Teacher Factor Scores for Rural Schools

Second, because of the lack of significant achievement differentiation of each variable group within the predominantly black-urban sample as well as the lack of significance found for some variable groups within predominantly white-urban and rural schools, we are unable to conclude that differences exist between the three strata on the amount of power possessed by our individual normative climate variables in differentiating higher and lower achieving schools. We did, however, find that the order of variable importance changed between strata. If we had enough cases and were thus able to analyze the 10 student and teacher variables simultaneously within strata, we may have found differences in the degree of discrimination by any given variable between different types of schools. Finding significant probabilities may also have been possible.

Looking at achievement with our present results, two obvious observations can be made. First, student perceptions of present evaluations-expectations appears to be a powerful achievement discriminator in rural schools although not nearly so important in the predominantly white-urban schools. Second, it appears that teacher beliefs in student improvability might be more important in predominantly black-urban schools than in schools categorized within the other two strata.

We have learned from our least square add linear regression analyses and the discriminate function analyses that certain social-psychological climate variables significantly predict achievement and differentiate between higher and lower achieving schools within certain stratum. Furthermore, interaction between the climate variables and higher and lower achievement might differ between predominantly white-urban, predominantly black-urban and rural schools.

CHAPTER V

COMPARATIVE ANALYSIS OF BLACK AND WHITE SCHOOL CLIMATE[1]

This chapter is an effort to compare the school climates of white and black urban elementary schools with relatively similar socio-economic status and achievement levels. Such an analysis provides further insight into the variables which may effect the differential academic performance of students in white and black schools.

Data for this analysis was collected from 2,620 students in 16 of the 17 schools within the white-urban and black-urban strata. In classifying schools as higher and lower achieving relative to strata, the one school with lower actual achievement (school 15-47.2) was assigned to the high achievement category even though its mean achievement was slightly lower than schools assigned to the low achievement category (school 02-48.1 and school 04-47.8). Therefore, school 15 was not utilized in this analysis because of design restrictions.

SCHOOL CLIMATE VARIABLES

Variables developed to measure school climate were Social Psychological scales and factors derived from the student questionnaire described earlier. The four factors are composed of most of the same items which make up the ten scales, but in somewhat different combinations. Rather than opt for scales or factors in this analysis the decision was made to utilize both types of variables for the following reasons:

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[1] A more detailed reporting of the comparison of White and Black schools on scales is available in Henderson (1972).

1. As stated previously, one major intent of this research was to examine the data in various ways.
2. Originally, this data was analyzed using 10 apriori scales.[1] To be consistent with the main analysis, however, the 4 student factors developed from varimax factor analysis (Chapter IV) are also reported.

SCALES

The scales used in this analysis were taken from related studies or apriori structured by the research team. These scales are as follows:[2]

Reported student press for competition or individual performances. This construct is designed to measure the perceived press of students in regard to individual competition within the school setting.

Importance of student self-identity or role. This scale is designed to measure the "relative degree of investment placed in the identity student, for self esteem maintenance."

Academic norms of school. Academic norms can be characterized as the general expectation for all role members of an organization.

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[1] The reliability of these scales was examined by Hoyt's analysis of variance procedures. This gives the percentage of variance in the distribution of pupil scale scores that may be regarded as true variance, and not due to the unreliability of the instrument (Hoyt, 1941). See appendix G for Reliability Coefficients.

[2] The contents of these scales are located in Appendix F.

In regard to schools, this means the demand for academic performance as reported by the students.

Sense of Control. Basically this scale measures the child's feeling of personal efficacy over his environment in relationship to his school performance. It is based upon the work of James Coleman, et al. (1966:288) who describes it in the following manner:

> If a child feels that his environment is capricious, or beyond his ability to alter, then he may conclude that attempts to affect it are not worthwhile and stop trying.

Self-concept of academic ability. This is a scale designed to measure the "evaluating definitions which an individual holds for himself in respect to his ability to achieve in academic tasks in general, as compared with others in his school class" (Brookover, et al., 1967).

Perceived evaluations and expectations. These scales are designed to measure the perceived evaluations and expectations of best friends (peers), teachers, parents, and principals. The dimensions of evaluations and expectations are defined by Auer (1971:53), and Brookover, et al. (1967:60) respectively as follows:

> Perceived evaluation is defined as evaluating definitions which an individual perceives another person holds of him in respect to his ability in academic tasks in general as compared with others in his school class.
>
> Perceived expectation is defined as expection which an individual perceives another person holds of him in respect to academic tasks as compared with others in his school class.

Reported teacher press for competition or individual performance. These items are designed to measure the teacher's press for competition or individual performance in school as reported by students.

As previously stated, to be consistent with the main analysis students factors will be examined also. Rationale originally was to cut down on the number of variables for analysis. An additional aspect is the factors are independent of each other from an individual student viewpoint. This allows us to examine school climate utilizing two types of variables.

The factors reported in this analysis are Student perceived present evaluation-expectations, Student perceived school academic norms, Student reported sense of futility, and Student perceived future evaluations-expectations.[1]

Analysis

Responses to each item of the respective scales were combined to form scale scores for each individual within a school. In those instances where all responses within an item or items within the scale were not in this same direction, linear transformations were performed to expedite analysis. School scale scores were obtained by calculating the mean of the student scale scores for each school. If a respondent omitted an item, the mean of the other items within that scale was substituted. If all items within a scale were omitted, the respondent was dropped.

Multivariate analysis of variance was employed to examine the climate variable difference between black and white schools. Rationale for this technique was based on two aspects (McCall, 1970):

(1) Multivariate procedures ask somewhat broader questions than univariate analysis and are more powerful.

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[1] These factors were described in Chapter IV and Appendix C.

(2) When several variables possessing psychological cohesiveness are examined, multivariate analysis is more appropriate than multiple univariate tests.

Small sample size, and consequently few degrees of freedom, prevents the multivariate testing of all the mean school scale and factor scores in concert. Therefore, these three groups of variables were analyzed separately.

TABLE 12

CLIMATE VARIABLE COMBINATIONS FOR MULTIVARIATE ANALYSIS

Variable Group A	Variable Group B	Variable Group C
Reported student press for competition	Perceived peer expectations and evaluations	Student perceived present evaluations -expectations
Importance of self-identity student	Perceived teacher expectations and evaluations	Student perceived schools academic norms
Academic norms	Perceived parent expectations and evaluations	Student reported sense of futility
Sense of control	Perceived principal expectations and evaluations	Student perceived future evaluations -expectations
Reported teacher press for competition	Self-concept of academic ability	

The following rationale was used in assigning the variables to the three groups shown in Table 12:

(1) Self-concept of Academic Ability and the Perceived Expectations and Evaluations were grouped together due to the previous

research illustrating the reciprocating effect of Perceived Expectations and Evaluations upon each other (Brookover, et al., 1965).

(2) The next group of variables were intuitively grouped together because all seemed to measure either individual or group indices that may influence normative patterns. These individual or group measures, in turn, could perhaps facilitate a school normative climate that could effect achievement.

(3) This variable group contains the student factors obtained from the factor analysis described in Chapter IV.

Findings

The first step of the multivariate analysis reported in Tables 13, 14, 15, and 16 revealed the absence of interaction effects.

TABLE 13

THREE FACTOR INTERACTIONS OR SECOND-ORDER INTERACTIONS (RACE X ACHIEVEMENT X SOCIOECONOMIC STATUS)

Variable group	Multivariate F value	Degrees of freedom	P less than
A	1.5514	5,4	.34*
B	.4151	5,4	.81*
C	1.2471	4,5	.39*

* P > .05

TABLE 14

ACHIEVEMENT BY SOCIOECONOMIC STATUS INTERACTIONS

Variable group	Multivariate F value	Degrees of freedom	P less than
A	.9614	5,4	.53*
B	.8033	5,4	.60*
C	.6967	4,5	.62*

* P > .05

TABLE 15

RACE BY ACHIEVEMENT LEVEL INTERACTIONS

Variable group	Multivariate F value	Degrees of freedom	P less than
A	1.2945	5,4	.41*
B	1.0656	5,4	.48*
C	.5365	4,5	.71*

* P > .05

TABLE 16

RACE BY SOCIOECONOMIC STATUS INTERACTIONS

Variable group	Multivariate F value	Degrees of freedom	P less than
A	1.7856	5,4	.29*
B	.5226	5,4	.75*
C	.5574	4,5	.70*

* P > .05

The absence of significant interaction allows testing for the main effect of race to be interpreted without accounting for possible confounding effects. An examination of Table 17 illustrates that the multivariate F-test are significant ($p \leq .05$) for all variable groups.

TABLE 17

RACE MAIN EFFECT
(DIFFERENCE BETWEEN WHITE AND BLACK SCHOOLS)

Variable group	Multivariate F value	Degrees of freedom	P less than
A	26.7755	5,4	.0036**
B	5.9188	5,4	.05**
C	18.7471	4,5	.0033**

** $P \leq .05$

Because of these significant differences between black and white schools, univariate F ratios were examined to determine which contributed to the overall group multivariate significance. The results are reported in Tables 18, 19, and 20.

TABLE 18

UNIVARIATE F - RATIO FOR VARIABLE GROUP A (DIFFERENCE BETWEEN WHITE AND BLACK SCHOOLS)

Variables	Between mean squared	Univariate F	Probability
Reported students press for competition	2.6481	.6962	.42*
Importance of self-identity student	19.5054	1.3815	.27*
Academic norms	.7809	.0733	.79*
Sense of control	84.5975	4.6653	.06*
Reported teacher press for competition	157.4478	30.9353	.0006**

* P > .05
** P $\leq$ .05

TABLE 19

UNIVARIATE F - RATIO FOR VARIABLE GROUP B (DIFFERENCE BETWEEN WHITE AND BLACK SCHOOLS)

Variables	Between mean squared	Univariate F	Probability
Perceived peer expectations and evaluations	24.5824	5.3084	.05**
Self-concept of academic ability	56.0087	19.6642	.0022**
Perceived teacher expectations and evaluations	21.2713	5.7801	.04**
Perceived parent expectations and evaluations	13.1602	2.6905	.13*
Perceived principal expectations and evaluations	5.3910	.3069	.59*

* P > .05
** P $\leq$ .05

TABLE 20

UNIVARIATE F - RATIO FOR VARIABLE GROUP C
(DIFFERENCE BETWEEN WHITE AND BLACK SCHOOLS)

Variables	Between mean squared	Univariate F	Probability
Student perceived present evaluations-expectations	.6050	26.2662	.0010**
Student perceived school academic norms	.0481	2.0923	.1860*
Student reported sense of futility	1.6493	23.1865	.0014**
Student perceived future evaluations-expectations	.0088	.1823	.6807*

* $P > .05$
** $P \leq .05$

An examination of the univariate F ratios on each of the dependent measures associated with the significant multivariate F ratios reveals the following scales as significant univariates: Reported teacher press for competition, Perceived peer and teacher expectations and evaluations, and Self-concept of Academic Ability. The least square estimate of effects gave the direction and estimated magnitude of the dependent variable. An examination of the univariate F ratios on each of the dependent measures associated with the significant multivariate F ratios reveals the following factors as significant univariates: Student perceived present evaluations-expectations and Student reported sense of futility. The least square estimate of effects gave the direction and estimated magnitude of the dependent variables.

TABLE 21

VARIABLE MEANS OF RACE AND LEAST SQUARES ESTIMATED EFFECTS OF SIGNIFICANT UNIVARIATES

Scales	White school scale means	Black school scale means	Estimated effects
Self-concept of academic ability	73.46	77.33	-4.01
Perceived peer expectations and evaluations	78.70	81.26	-3.17
Reported teacher press for competition	66.51	72.98	-5.95
Perceived teacher expectations and evaluations	80.36	82.75	-2.75
Factors	**White school factor score means**	**Black school factor score means**	**Estimated effects**
Student perceived present evaluations-expectations	.0682610	-.3333958	.381355
Student reported sense of futility	-.5139222	+.1497310	-.571806

Table 21 gives the least squares estimate of the univariates which were significant. It indicates that black schools scored higher on all scales (Self-concept of academic ability, Perceived peer expectations and evaluation, Reported teacher press for competition, and Perceived teacher expectations and evaluations) than white schools. Whereas factors revealed White schools scored higher on Student perceived present evaluations-expectations than did black schools and black schools scored higher on Student reported sense of futility than did white schools.

This analysis was an attempt to investigate whether Social Psychological climate differed between white urban and black urban elementary schools. Methodological problems such as small sample size, cells with one observation, and relative achievement level and socio-economic status comparability between black and white schools were present. Even with the above problems considerable merit and prolific possibilities are still claimed in terms of future research endeavors. For example, variables which are identified as being significantly different between black and white schools can be investigated to see whether they have any connection to the achievement differential between white and black schools.

A variable which contributed heavily to the significant multivariate test of Variable Group A is Teacher Press for Competition. Black schools scored highest on this scale, which means that students in black schools perceive the teacher emphasizing competition among the students. Tenable suggestions concerning the relation of this to the achievement differential between white and black schools are as follows:

(1) Teachers in black schools, due to school organization such as tracking (ability grouping), systematically "cream off and cool out" students. Instead of the normative pattern of the school expecting almost all students to succeed, only a "chosen few" are expected to succeed.

(2) When students are encouraged to engage in excessive competition rather than cooperative ventures, the interaction between them may be detrimental to a normative system conducive to maximal achievement for all students.

A significant univariate result was also obtained for Self-Concept of Academic Ability. This variable was the most powerful contributor to the overall significant multivariate test of Variable Group B with the black schools scoring higher on this scale than white schools. This suggests that Self-Concept of Academic Ability of students in these black elementary schools emerge in a relatively segregated black reference group in which lower academic performance is the standard against which students assess their ability.

A significant variable in the univariate testing was Perceived Peer Expectations and Evaluations. Parsons (1959), Coleman (1961, 1966), Wilson (1969), and Kerckhoff (1972), all speak of the crucial role peers play in the school social systems. Peers can either facilitate or mitigate against school achievement. Since black schools scored highest on this scale, a possible implication is that the normative system of peers is very strong in black schools, but perhaps does not support achievement.

The Perceived Teacher Expectations and Evaluations Scale was also significant in the univariate testing. Black schools scored highest on this scale which seeks to measure the self-fulfilling prophecy phenomenon in regard to achievement (Rosenthal and Jacobson, 1968). However, the supposed concomitant phenomenon of academic achievement is not present. A tenable implication from our perspective is that students in black schools may, in fact, have such perceptions but the teachers may expect and/or evaluate student performance by standards which are lower than national or state norms.

A particularly enlighting phase of this analysis were the factors which contributed to the significant multivariate test of Variable Group C. White schools' factor scores were higher on student perceived present evaluations-expectations and black schools' factor scores were higher on student reported sense of futility. This may explain some of the usual achievement differential between white and black schools.

1. When students in black schools' perceive that parents, teachers, and friends are assessing them lower and expect less of them than those attending white schools, performance is likely to follow expectations.

2. The higher mean factor score in black schools on Student reported sense of futility is noteworthy. One aspect of this factor is the student perceptions of their efficacy within the social system. Another aspect are teachers and other students feelings of hopelessness or lack of caring about academic achievement within the school social system.

An examination of these results highlight the possible importance of Student reported sense of futility, and student perceived evaluations-expectations in academic climate. These constructs were weighty contributors to the significant difference between white and black schools. Previous analyses have indicated that Student perceived present evaluations-expectations and Student reported sense of futility are significant predictors of achievement in all schools. Further exploration into the school climate differences between black and white schools and the possible relationship to the achievement gap between white and black schools is warranted.

CHAPTER VI

COMPARATIVE OBSERVATIONS OF THE SCHOOLS

In addition to the statistical analysis reported in Chapter IV, some further observations concerning the school climates may add to our understanding of relationships between various factors of school climate and achievement within the schools. The observations provide no basis for definitive conclusions, but they may suggest fruitful areas for future research. We have therefore examined the relative rankings of school factor scores by matched pairs, by strata, and within the entire sample; and compared the pattern of factors found in five pairs of schools matched on SES, race, and urban-rural community type, with significant differences in achievement. The five pairs of schools include: one pair of high SES predominantly white-urban schools, one pair of low SES predominantly white-urban schools, one pair of high SES predominantly black-urban schools, one pair of low SES predominantly black-urban schools, and one pair of rural schools. Finally, we looked at the case of a very high achieving low SES school which serves as an example of several schools of this type located in the upper penninsula of Michigan.

OBSERVATIONS FROM FACTOR SCORE RANKINGS

Observation of factor scores[1] within individual "match-ups." within stratum, and within the entire sample reveal the following relationships:

1. Student reported sense of futility is lower for higher achieving

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[1] See Tables 25-34 located in Appendix and Figures 1-6.

schools in all white-urban, black-urban, and rural comparisons.

2. Student perceptions of future evaluations-expectations are more positive for higher achieving schools among all black- and white-urban pairs, but not for the rural schools.

3. Teacher present evaluations-expectations are more positive in all higher achieving schools, in all white-urban pairs and all but one of the black-urban pairs.

4. Teacher future evaluations-expectations of students are consistently more positive in the higher achieving of each pair of white-urban and black-urban schools matched on SES.

5. The teacher present evaluations-expectations factor is generally more positive in our rural sample than in urban schools, but the teacher future evaluations-expectations factor is generally lower in the rural schools than in the urban ones.

6. Teacher reported push of individual students is consistently lower in the higher achieving schools within the white-urban matched pairs, and all but one of the black-urban matched pairs.

7. Job satisfaction appears to have little relationship to achievement, but it does appear to have a relationship to SES among white and black urban schools. Interestingly enough, teachers express higher satisfaction in lower SES black schools that they do in higher SES black schools, but teachers express greater job satisfaction in higher SES white schools than they do in lower SES white schools.

8. Teacher perception of student improvability does not appear to differentiate the higher achieving white schools, but it does appear to differentiate between higher and lower achieving black urban schools.

OBSERVATIONS OF PAIRS OF HIGH AND LOW ACHIEVING SCHOOLS

High SES Predominantly White Urban schools 01 and 02

School 01

This is a high SES (55.1), high achieving (59.6), predominantly white urban school, located in a medium sized city, in the western part of Michigan. Most of the students come from "professional, upper middle class" homes. Many parents hold advanced university degrees, with several teaching at a nearby state university. Within one group of 13 students, members of a single classroom, to whom the questionnaire was administered, three had fathers holding Ph.D. degrees and another father held both a Ph.D. and an M.D. degree. These 13 students were part of a split section of third and fourth graders, especially chosen for their ability to work alone. According to the school principal, however, this particular group although atypical, was by no means unusual with respect to the total parental school level of occupation or education. The principal identified the parents as being extremely supportive of the goals and educational desires advanced by the school.

When observed the school was thirteen years old. It had carpeted, spacious hallways and a glassed in courtyard, all conveying a comfortable, spacious atmosphere. The library was in the main hallway and students were encouraged to stop on their way through the school, pick up a book, and take a seat or lie on the floor to read. The courtyard was being used by the students to raise one goat and an ever expanding family of rabbits. Students took turns taking the animals home on weekends and during vacation breaks. In several rooms there were signs over various displays which stated "please touch."

The principal, a very impressive woman, held her position since the building first opened. She held very definite ideas about education, defining a "good teacher" as someone who dared to try anything, but would admit to failure. She rated the students at approximately the national norm in achievement, a rather conservative estimate compared to their State Assessment results.

The school had for some time been racially integrated, but during the school year in which they were studied, a large group of black children from a welfare project composed mainly of mothers receiving Aid to

Dependent Children, had been bused into the school. According to the principal, any problems presented as a result of this situation at the start of the school year were due to a lack of advanced preparation. Most problems were apparently resolved at the time of data collection. When asked if she anticipated a slip in achievement ranking, she replied that "in the short run this was possible," but that "in the long run, children learn what they are expected to learn," and that all of the students in her school were "expected to achieve."

It appears that in this school we have a social system operating to expose students to an intentional, non-traditional education. Even though it is the feeling that these students come from a home environment that will most likely insure their future success, we find that the teachers are willing to push those individuals whom they believe are not performing up to the standards set by the school.

Compared to other schools, some factor scores of interest are: the highest student perceived present evaluation-expectation of the white schools and the highest teacher future evaluation-expecation of all schools sampled. To compare this school with others in the white-urban strata and the entire sample, see Appendix E and Figures 1-6.

School 02

This school was chosen as the high SES (55.2), low achieving (48.1) match of school 01. It is located in an older, fairly affluent community which has in recent years absorbed a large "spill over" from a nearby urban industrial city. It serves a large number of families living in high cost housing subdivisions at various stages of development, and a small lower SES area. As the school's boundaries cover a large area of land, students are bused to and from school each day. According to the principal, busing is an extremely complicated task that creates great confusion in the school's schedule.

The school was constructed three years previously and designed to encourage team teaching. Clusters of classrooms surround a large commons area where large group instruction could take place. According to the principal, the staff had thus far made a limited attempt at team teaching because they did not feel "comfortable" in dealing with this method of instruction. She did, however, envision more participation in the future.

Ability grouping was practiced throughout the school between grades, within grades, and within classrooms. Teachers were encouraged, by the principal, to carefully study "ability" test results and to compare their perceptions with where the students "should be." Just prior to our visit, the school had, according to the principal, " . . .enlisted the aid of a language and learning specialist to help us (make a) more accurate diagnoses (of reading readiness)."

Prior to accepting her first administrative position, when the building opened, the principal had been teaching for five and one-half years and had recently received a Ph.D. degree. She rated her students' achievement level at the national norm and although she believed most of her students would complete high school, she expected few to attend college and less than 30% to obtain a college degree.

It appeared that the low achievement might have been attributable to the newness of the school servicing a large geographic area which has not yet become a community, and employing a staff which was not yet comfortable with their own positions in this confusing and unstable situation. It is our speculation that integration of community and school behavior, educational goals and desires had not yet developed. Looking at the school mean factor scores, we find low student perception of school academic norms, a fairly high sense of futility, and low teacher perceptions of parent-student academic push. To compare this school with others in the predominantly white-urban strata and the entire sample, on mean factor loading scores, see Appendix E and Figures 1-6.

Low SES Predominantly White-Urban Schools 07 and 08:

School 07

This low SES (43.2), high achieving (56.7), predominantly white-urban schools is located on the outskirts of a small city in the upper peninsula of Michigan. The surrounding neighborhood is composed of well maintained old homes, lining unpaved roads. The school itself was initially constructed in the early 1900's.

The total school environment appeared neat and extremely well ordered. The observed teacher classroom behavior might best be described as "traditional." Classes were conducted in self-contained rooms of about 30 students each, and the curriculum encompassed such subjects as: arithmetic, spelling, grammar, reading, and geography.

The principal, who had held his present position for eight years, taught a class himself. At the time of his interview, he was just completting his 39th year as a teacher and during the last 24 of these years, he had been a teaching principal. Only one teacher in the building had been there for less than 5 years.

When the principal was asked if a good relationship existed between the school and the community, he replied positively. When asked what type of reaction might be expected from the school administration if there was ever a complaint, by parents with respect to the type of job that a particular teacher was doing, the principal replied emphatically, "the teacher would be fired!".

The school, thus, appears to be a highly integrated segment of the surrounding community. The school personnel were members of the immediate community and reacted favorably to the will of the local citizenry.

Compared to other schools, some school mean factor scores of interest are: high student present evaluations-expectations, very low sense of futility, very low student emphasis placed upon norms of academic achievement, low teacher perceived need to push students, and low teacher satisfaction. To compare this school with others in the white-urban strata or the entire sample, see Appendix E and Figures 1 - 6.

School 08

This school was chosen as the low SES (44.9), low achieving (44.6), match for school 07. It is located on the outskirts of a medium size city in western lower Michigan. The surrounding area is composed of small, older homes which appear to have been constructed by the individual owners. Automobiles were parked on front lawns, automobile parts were scattered across the lots, and many garages stored snowmobiles.

The school itself was approximately ten years old and "traditional" in design. Classrooms were built to accommodate about 30 pupils each. The student population was fairly small, with 90 students in the 4th, 5th, and 6th grades. Classrooms were neatly equipped with straight rows of desks and the subjects stressed were of the same "traditional" type as found in school 07: arithmetic, spelling, grammar, etc. The students in school 08, however, were not as orderly as were those in school 07. When one teacher walked out of the room to complete her questionnaire, students immediately became quite restless.

The principal had held his present position for three years, and was concurrently principal of two other schools, one of which he had taught in for three years prior to accepting his current position. He explained to the research team that this particular building had a high rate of staff turnover and that not a single teacher remained of those who were there when he became principal. Four of his current classroom teachers had less than three years of teaching experience and were not yet permanently certified. He felt now, however, that for the first time, he had a staff upon which he could build a "strong" educational program.

The principal explained that much of the community population was on welfare, and that those who did work, drove long distances daily to and from the industrial section of the nearby city. He stated that although parents expressed a desire for their children to have a "good" education, many would take their children out of school for prolonged periods of time, to go on hunting trips and such, neglecting to inform the school first. Some parents would apparently hide in their homes when school officials would visit.

Compared to other schools, some school mean factor scores of interest are: low present and future evaluations-expectations by both students and teachers, a high student perceived sense of futility, high student perceived emphasis on academic norms, high teacher perceived parent-student push for educational achievement, high teacher push, and a strong teacher perception that members of the school social system believe that background does not alone determine academic success. To compare this school with other schools in the white-urban strata or the entire sample, see Appendix E and Figures 1 - 6.

High SES Predominantly Black-Urban Schools 11-12:

School 11:

This is a high SES (61.3), high achieving (55.1) school, located in one of the affluent sections of a large industrial city. The surrounding neighborhood is composed of large, expensive, well kept homes, most of which are between 40 and 50 years in age. Ten years ago this section of the city was almost entirely white and is now mainly black. Before this shift in population, this specific neighborhood was considered to be one of the wealthiest and most prestigious in the entire metropolitan area. In recent years, although property values have decreased, the area remains highly prestigious. A fairly large white student population that remains in the neighborhood, attend a nearby Catholic elementary school. The parents, both black and white, who do send their children to school 11, have a high SES, and include several university professors, symphony musicians, school administrators, and local politicians. They have chosen to live in this neighborhood because they receive more housing value for their money, have a commitment to remain within the city, and/or some other personal desire to remain.

The school itself is as old as the neighborhood, is rather large in both physical size and student population (275 students were sampled from grades 4, 5, and 6), but the surroundings are pleasant and the building is obviously well maintained. Classes are located in self-contained rooms of about 30 students each and the curriculum appeared to be fairly "traditional" and structured in both student-teacher relationship and course content. Ability grouping was prevalent, both within classrooms and between grade sections. The principal expected her teachers to use individual ability test scores in making judgments about student placement and ". . . individual strengths and weaknesses."

This was the principal's first year in her current position, having had 8 1/2 years previous teaching experience and one years experience as assistant principal in the same building. She was the school's first black principal. The principal, appearing to be well organized herself, also defined a "good" teacher as someone who both "challenges" and is organized. She was aware that the school was the highest achieving predominantly black school in the state of Michigan and expressed the hope that this ranking would not "slip."

The teaching staff is very stable, with a slow rate of turnover (there had been no teacher turnover in two years prior to our visit and none were anticipated for the next year) and twenty of twenty-five teachers are permanently certified. School 11 has a reputation throughout the city as a "good" school and teachers appear anxious to accept placement there.

The principal referred to the parents extreme interest in the school, reporting that parents both initiate and carry out many volunteer projects (tutoring, extended school day, summer school programs, and much in the way of fund raising activities).

School 11 could be characterized as an island of stability, within a slowly changing neighborhood. The people in this neighborhood have in the past and continue, to identify themselves as living "in the_________ school community," a community uniquely resembling in climate, that of influential suburban peer groups.

Compared to other schools, some of the mean factor scores of interest for school 11 are: a very low student present evaluations-expectations, but an extremely high student future and teacher present and future evaluations-expectations, a low student-perceived emphasis placed upon academic norms, a relatively low teacher reported need to push students, and high teacher perceptions that the school social system dictates that the student's past does not determine future achievement. To compare this school with others in both the black-urban strata and the entire sample, see Appendix E and Figures 1 - 6.

School 12:

This school was chosen as the high SES (52.9), low achieving (47.2) match of school 11. Considering the wide discrepancy in SES, between schools 11 and 12, they were chosen as a match for the following reasons: (1) no other predominantly black school came closer to the SES level of school 11 than did school 12; and (2) school 12 is located ajacent to school 11 (with back yard fences determining which school certain students attend).

While school 12 is located in a neighborhood that does not share the high SES of school 11, it is still characterized by large, well-kept homes, most of which are 40-50 years old. Like school 11, this area has also undergone a racial shift in the past 10 years, but unlike that in the school 11 area, it has been less gradual and was just recently completed. The black families who had moved into this area generally had slightly lower SES than the white families who had moved out.

The school itself, was approximately the same in size and physical appearance as school 11. There had, in recent years, been additions constructed on both schools, however, school 12's were necessarily larger to accommodate its greater student population (406 students were sampled in grades 4, 5, and 6). As in school 11, the self-contained classrooms, student-teacher interaction, and course content appeared to be fairly "traditional" and structured. Although straight rows of desks faced the front of the rooms, and a stress on such subjects as English grammar, arithmetic, spelling, etc., was prevalent, the orderliness reported as a characteristic of school 11 was not observed in school 12. Interestingly, only one door in the entire school could be opened from the outside, with a student guard stationed at that door.

Very little is known about school 12's principal. As was explained in Chapter III, he was to busy to either fill out our questionnaire or be interviewed during our visit. He has not complied with our several requests to complete the instruments which have been both mailed and personally handed to him in self-addressed stamped envelopes. Although he has claimed to have returned at least two of our questionnaires, none has been received by our research office.

The teaching staff has apparently experienced a tremendous turnover in recent years. Six of the twelve teachers responding to our questionnaire, were new to the building that year. Only one teacher in our sample had been in this school for over five years.

Due to the principal's lack of cooperation, it is impossible to accurately assess the present relationship existing between the school and the surrounding community. However, given the impressions of school instability, coupled with the recent and drastic change of community, it is doubtful that a favorable relationship exists.

Compared to other schools, the factor scores for school 12 are: a very low student present evaluations-expectations, a fairly high sense of futility when compared to the whole sample, low student perceived emphasis placed upon academic norms, a high teacher perceived parent student push for educational achievement, low teacher satisfaction, and a very strong teacher perception that members of the school social system believe that the past experiences which a student has had, do determine his chances of academic success. To compare this school with others in both the black-urban strata and the entire sample, see Appendix E and Figures 1 - 6.

Low SES Predominantly Black-Urban Schools 17-18

School 17:

This school is a low SES (47.0), high achieving (49.6), predominantly black school located in a small city which in recent years has lost much of its individual identity having been absorbed into the metropolitan area of a large industrial city. The specific neighborhood surrounding the school is stable and small, characterized by well kept, "working class" homes.

The school itself is about 10 years old. It is a one story structure with large windows, surrounded by a well kept lawn and a large playground. Classrooms are self-contained to accommodate about 30 students, and are traditionally designed with straight rows of desks. The school program appears highly structured with students encouraged to raise their hands when they had something to say, and such basic subjects stressed as: reading, arithmetic, grammar, spelling, etc. A most appropriate phrase used to describe this school might be a "highly disciplined environment."

The principal had held this current position for eight years and had fifteen years of prior teaching experience. The teaching staff was highly stable. Most of the teachers had been in this building for at least five years, many coming with prior experience. The principal and three of the teachers had left the same school, located about 30 miles away, to come to school 17 together. Interestingly, the school which they had left was school 13 of our sample, in which we were not allowed entrance in order to collect data. School 13 is the second highest achieving predominantly black school in the state, while school 17 is the third highest achieving predominantly black school. These teachers have, thus, been on the staff of the second and third highest achieving predominantly black schools in the state, both of which had a low SES. We do not mean to imply any causality in this finding. The same school factors which attracted them to school 13 may well have attracted them also to school 17. However, given the extremely small number of low SES - high achieving predominantly black schools, it might be worthwhile to more closely study this interesting situation.

The principal reported that the relationship with the community was excellent. He stated that many of the persons living in the community had moved there in order to escape "undesirable circumstances" and to make a better life for their children. According to the principal, parents work very closely with the school in everything from changing its name to choosing textbooks and recommending changes in the school's curriculum.

Other school factors of interest to compare with school 17 are: extremely high future evaluations-expectations by students and teachers, a very low sense of futility, very high student perceived emphasis on norms favoring academic achievement, an extremely high teacher-perceived parent-student push for educational achievement, very high teacher push of individual students, high teacher satisfaction, and very strong teacher perceptions that members of the school's social system do not believe that a students past determines future achievement. To compare this school with other schools in the black-urban strata or the entire sample, see Appendix E and Figures 1 - 6.

School 18:

This school was chosen as the low SES (46.7), low achieving (39.6) match of school 17. It is located in the center of a large industrial city, and services an area of high factory-industrial concentration. The residential district includes both single family dwellings and apartments. These are generally old, many are not well kept, and glass and debris cover many of the neighborhood streets. The area is densely populated and provides little space for recreation. The neighborhood recently became a test area for A.D.C. home purchases.

The school itself resembles a factory. It is quite large, physically as well as in numbers of students (384 students were sampled in grades 4, 5, and 6). Inside, the walls and hallways are dark and rather depressing. Many of the windows were broken, cracked, and temporarily repaired with tape. Classrooms were "traditionally" designed with seats bolted to the floor, in straight rows, facing the front of the rooms.

The principal had held his position for two years after having had 11 years of teaching experience. The staff was quite young, with 49 of 60 teachers in their first three years of experience. The school had been experiencing a very high rate of teacher turn-over, until the staff had recently been "frozen" into the building. This policy temporarily restrained any teacher in this school from transferring within the school district. It was the principal's contention that this was the most expedient way to gather and retain a staff long enough to build a sound educational program.

The principal characterized the school-community relationship as exhibiting a lack of "cohesiveness" and "identity." Until the 1960's, the racial composition of the area was entirely white "working class."

By the time of our visit (early 1971), the area was 90 percent black. In addition to this rapid racial transition, the neighborhood became extremely transient. With the new A.D.C. home buying program in operation, and staff freeze, it was his hope that stability might prevail to ensure higher achievement within the school.

Compared to other schools, some of the mean factor scores of interest for school 18 are: a very high student perceived sense of futility, high teacher perceived parent-student push for educational achievement and extremely high teacher push. To compare this school with the black-urban strata and the entire sample, see Apprendix E and Figures 1 - 6.

Rural Schools 22 and 24:

School 22:

This low SES (44.3), high achieving (60.6) school is located in a small farming community, in the northwest portion of the lower peninsula of Michigan. The center of the area consists of the school, a church, a a small grocery, and a gas station. The local people live on farmlands, although few families depend on farming as a means of sole support. There is a powerplant, near a small city of about 8,000 inhabitants, located 15 miles away, where many of the men earn enough money to provide their livelihoods. In recent years, a substantial number of black families have moved into the community as a result of finding work in the powerplant. Their children now account for about 12-1/2 percent of the school population.

The school is a combination high school-elementary school. The main building is quite old, but the elementary classes are held in a new wing in several large, well lighted, self-contained classrooms. Even the new section of classrooms appeared to be rather "traditional" in design, with their straight rows of desks facing the front, and obviously orderly. The curriculum was heavily loaded with basic subjects such as: arithmetic, reading, grammar, geography, etc. There was no question that the teacher was in control, but at the same time, there was also no tension of the imposed discipline discernible in many of our schools.

The principal had held his position for twenty-three years and was also the present superintendent of schools. He took great pride in his school and the surrounding community. There had been several new teachers in the school that year, an occurrence the principal described as extremely rare. Although most of the teachers in the school had been there for over five years, very few actually lived in the community. This apparently did not hinder the excellent relationship that existed between the community and the school. For at least twenty-five years, the principal had experienced a community in strong support of education. According to the principal, the families in the area are large, well disciplined, and total family participation is prevalent in school social and sporting events.

Compared to other schools, the mean factor scores of interest for school 22 are: high student and teacher future evaluations-expectations, extremely high student perceived school academic norms, and low teacher reported satisfaction. To compare this school with others in the rural sample, see Appendix E and Figures 1 - 6.

School 24:

School 24 is the low SES (47.8), low achieving (45.6) match for school 22. This school is located in a small farming and residential community, in the center of the lower penninsula. As in the case of school 22, most of the fathers of students in school 24, cannot afford to support their families on a farm income, and therefore, work at various jobs in a city of slightly over 20,000 people, located about 20 miles away. Originally a Catholic settlement, large numbers of Protestants have recently begun to move into the community.

The school accommodates grades K-12 in two fairly new and large structures, separated by a common cafeteria. The curriculum in school 23 was not observed to be significantly different than that offered to students in school 24. The students in school 24 were not as attentive to this researchers instructions concerning the completion of our questionnaire, as were the students of school 22. Several of the school 24 students, in fact, engaged in a race to see who could finish checking answers first, without bothering to read the questions.

There was a great deal of confusion as to exactly who was the principal in charge of the elementary school. The high school principal directed the research team to the superintendents office, declaring that he was responsible for only the high school section of the building. The superintendent, in turn, had us return to the office of the high school principal, informing us that he was the only principal that the building had. We, therefore, interviewed the high school principal who was just completed his second year in his present position after five years of teaching in a city located over 200 miles away. Neither the principal nor any of the elementary teachers in school 24 lived within the school community.

The relationship between the community and the school may best be categorized as "confused." As was mentioned, the town had originally been a Catholic settlement and consequently the population and present local leadership was, according to the principal, overwhelmingly Catholic. According to the principal, the Catholic families of the town sent their children to this public kindergarten, the Catholic elementary school next door, and then back to this public high school. The Catholic elementary and public high school, he claims, both had much higher standards than did the public elementary school. The only students who attended the public elementary school were apparently those who were either the children of the Protestant newcomers, those who were not part of the regional community, or those who the principal referred to as "dissonant Catholics" who had for some reason (usually academic or disciplinary) decided to place their children in the public school. According to the principal, "dissonant Catholics" were not highly regarded by the town leadership.

Compared to other schools, some of the mean factor scores of interest for school 24 are: an extremely high student perceived present evaluations-expectations, but a very low student and teacher future evaluations-expectations; a high student reported sense of futility; low student perceived academic norms; low teacher perceived parent-student academic push; and high teacher push of individual students. To compare this school with others in the rural strata, and the entire sample, Appendix E and Figures 1 - 6.

Rural School-High Achievement-Low SES-Upper Penninsula:

School 21:

This low SES (42.9) high achieving (58.2) school is located in a farming area in the northern portion of the upper penninsula of Michigan. School 21 was selected for inclusion in this chapter as an example of a large number of high-achieving schools which are located in economically depressed areas of the upper penninsula.

The school has a long history and has achieved a fair amount of regional fame for being the first consolidated rural agricultural school in the State of Michigan (established in 1913) and by an unsuccessful attempt by residents of the community to prevent their high school from being annexed to the school district of a nearby city. As a result of this annexation there are currently two classrooms being used within the same building which originally housed grades K-12. The first of these classroom is composed of all students in grades K-3 while the second is for all students in grades 4-6. The type and method of education employed by the teachers within these two classrooms can best be described as traditional with such subjects as: arithmetic, spelling, reading, and handwriting being taught to students who generally sit in straight rows. The teacher of grades 4-6 is also the principal of the school, a position he has held for 23 years prior to our observation of the school.

The principal reported that students were grouped for such subjects as reading, math, and English and that the older students were used to teach these subjects to younger students. This situation was essentially a one room school house and the principal reported that no other intentional grouping practices were employed.

The principal believed that students in School 21 can be expected to achieve above grade level and above national norms. He also reported that while he expected 90% or more of the students to complete high school that only around 30% could be expected to attend college. He explained that while they always found a way of suporting those students who "should" go to college and that those who went would be very successful while in college that he believed not all students "should." Many students, he contended, do not need college and are better off at home, and for those individuals the principal found jobs.

There appears to be a rather complete concensus concerning what the school should be doing between those in the community and the principal. The principal owns a home next to the school upon which the area people perform maintenance and have built such additions as a greenhouse. In return for performing these services the principal does the income tax for all the people in the area and provides them with other professional assistance whenever and wherever it is needed. It appeared that the principal was the teacher, employment agency, accountant, and confidant to the entire school community and he was without much doubt the most respected person in the area.

Compared to other schools, some of the mean factor scores of interest for school 21 are: the lowest student perceived future evaluations-expectations as well as the lowest student perceived school academic norma of all of the schools. We also found a low teacher future evaluations-expectations, being the lowest of all rural schools and the 22nd of the 24 schools sampled, and a low teacher reported push of individual students, being the 6th of the 7 rural schools and the 23 of the 24 schools in the sample. On the other hand school 21 also has the highest teacher present evaluations-expectations and teacher perceptions of student academic improvability of all the schools which were sampled. To compare this school with others in the rural strata, and the entire sample, see Appendix E and Figures 1 - 6.

Through the comparison of different types of schools on our charts, we again found that the relationship between our climate variables and achievement might be different for different school strata. By looking more closely at each school we were led to speculate that the amount of "psychic integration" between schools and the community served, along with school stability, might be important bases upon which a normative academic climate conductive to higher academic achievement is constructed. We did not, however, find any evidence which led to the speculation that particular school design, either physical or curricular, was an essential prerequisite to higher achievement.

CHAPTER VII

SUMMARY

The purpose of this study was to identify social-psychological variables comprising school normative academic climate that differed between high and low achieving elementary schools, while controlling, for school mean socio-economic status, race, and urban-rural community type. More specifically, we sought to determine which of several social-psychological environmental factors most strongly predict achievement as well as differentiate between high and low achieving predominantly white-urban, predominantly black-urban, and rural elementary schools. We also investigated whether or not the school climate variables are significantly different in predominantly white and black urban schools.

The theoretical foundation for this research is derived from a social psychological theory of human behavior, as stated by Brookover and Erickson (1969);

1. The social norms and expectations of others define the appropriate behavior for persons in various social situations.
2. Each person learns the definitions of appropriate behavior through interactions with others who are important and significant to him.
3. The individual learns to behave in ways that he perceives are appropriate or proper for him.

4. The individual also acquires conceptions of his ability to learn various types of behavior through interaction with others whose evaluations are important to him.

Data were collected from 10 predominantly white-urban elementary schools, 7 predominantly black-urban elementary schools, and 7 elementary schools located in rural areas. Schools within each stratum were selected on the basis of their mean student achievement, as measured by the Michigan State Assessment Achievement Index, and mean student S.E.S., as measured by the Michigan State School Assessment S.E.S. Index. Pairs of schools were selected with similar S.E.S., racial composition, and urban-rural community types, but significantly different mean student achievement scores.

The instruments employed in the current research were designed to study certain social-psychological and structual variables constituting normative academic climate within each of the schools. The instruments used within each school consisted of a student questionnaire, a teacher questionnaire, and a principal questionnaire, all with overlapping value. These instruments were administered to fourth, fifth, and sixth grade students, the teacher of these students, and the principal of the school. Response to many questions in all questionnaires involved the participant as an observer of the school's environment. A standardized procedure of data collection and consequent coding of the material was carried out by the same research team.

Apriori scales[1] based on previous research and those structured by the research team were employed in the student questionnaire.

1. Reported student press for competition
2. Importance of student self-identity or role
3. Academic norms of the school
4. Sense of Control
5. Self-Concept of Academic Ability
6. Perceived Best friend expectations and evaluations
7. Reported teacher press for competition
8. Perceived teacher expectations and evaluations
9. Perceived parent expectations and evaluations
10. Perceived principal expectations and evaluations

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[1] Scales are located in Appendix F.

In order to identify clusters of variables which combined to form meaningful factors, and through this to reduce the number of factors to manageable numbers, we applied a Varimax Rotation Factor Analysis[3] to each set of data. This produced factors identified as follows:

Student Factors:

Four factors emerged from the Varimax Rotation Factor Analysis on student data and were labeled:

1. Student Perceived Present Evaluations-Expectations (S.P.P.E.E.)
2. Student Perceived Future Evaluations-Expectations(S.P.F.E.E.)
3. Student Reported Sense of Futility (S.R.S.O.F.)
4. Student Perceived School Academic Norms (S.P.S.A.N.)

Teacher Factors:

Six factors emerged from the Varimax Rotation Factor Analysis on teacher data and were labeled:

1. Teacher Present Evaluations-Expectations (T.P.E.E.)
2. Teacher Future Evaluations-Expectations (T.F.E.E.)
3. Teacher Perceptions of Parent-Student Academic Push (T.P.P.S.P.)
4. Teacher Reported Push of Individual Students (T.P.P.I.S.)
5. Teacher Reported Feelings of Job Satisfaction (T.R.F.J.S.)
6. Teacher Perception of Social System Belief in Student Academic Improvability (T.P.S.A.I.)

Principal Factors:

Clearly definable principal factors did not emerge from our Varimax Rotation Factor Anaylsis and, principal data were not used for further statistical anaylsis in this report.

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[3] Items upon which these factors were derived can be found in Appendix C.

Several methods of analysis were used to identify characteristics of the school's social climate that might explain the differences in achievement.

1. Least square add linear regression analysis to predict the variance in achievement accounted for by the school climate variables.
2. Discriminant function analysis to develop a pattern of variable relationship which maximally differentiates between higher and lower achieving schools.
3. Multivariate analysis of variance to determine which school climate variables significantly differ between white and black schools.
4. Case analyses of the patterns of variables in individual and pairs of schools in the several categories.

Regression Analysis

In this analysis the dependent variable was mean school achievement, as measured by the Michigan State School Assessment Achievement Index. The effects of SES, race, and urban-rural type were controlled by placing them into our regression analysis prior to the introduction of the climate variables. The control variables accounted for 25.56% of the variation in achievement. The following climate variables were found to be significant predictors of the higher achieving schools and together they accounted for more than 60% of the variance in mean achievement.

1. Lower Student Reported Sense of Futility: $p = <0.0005$, predicting an additional 44.92% of the variance in achievement.
2. Greater Teacher Future Evaluations and Expectations: $p = 0.008$; predicting an additional 9.83% of the variance in achievement.
3. Teacher Reported Press of Individual Students: $p = 0.023$; predicting an additional 5.28% of the variance in achievement.
4. Greater STudent Percieved Present Evaluation and Expectations: $p = 0.052$; predicting an additional 3.36% of the variance in achievement.

Because of the high predictive power of S.R.S.O.F., another least squares add linear regression analysis was run to determine how the other factors related to it. Student Reported Sense of Futility was the dependent variable, while the other nine school factor scores were used as independent variables with SES, race, and urban-rural community type controlled by placing them into our regression analysis prior to the introduction of our variables of interest.

The control variables accounted for 39.94% of the variation in S.R.S.O.F. The following other factors significantly predicted a lower sense of futility in our sample schools:

1. Higher Teacher Present Evaluations Expectations.; p = 0.002; predicting an additional 25.17% of the variance in futility.
2. Higher Student Perceived School Academic Norms.; p = 0.029; predicting an additional 8.32% of the variance in futility.
3. Higher Student Perceived Present Evaluations and Expectations.; p = 0.042; predicting an additional 8.04% of the variance in futility.

Discriminant Function Analysis

For this analysis the dependent variables were higher and lower achievement relative to both the strata analyzed and the mean S.E.S. of the school. The strata were; predominantly white-urban, predominantly black-urban, and rural schools. The effects of strata were controlled by analyzing them seperately. The effects of S.E.S. although not controlled, were minimized by our study design and sample selection. Because of our small sample size, the 10 variables used as independent variables were divided into three groups: the student factors (Student Perceived Present Evaluations and Expectations, Student Perceived Future Evaluations and Expectations, Student Reported Sense of Futility, and Student Perceived School Academic Norms), group 1 - teacher factors (Teacher Present Evaluations Expectations, Teacher Future Evaluations and Expectations, and Teacher Reported Push Individual Student), and group 2 - teacher factors (Teacher Perception of Parent-Student Push for Educational Achievement, Teacher Reported Feelings of Job Satisfaction, and Teacher Perceptions of Student Academic Improvability).

On the basis of this analysis, the following conclusions were reached:

1. Among the predominantly white-urban schools, the 4 student variables significantly ($p = <0.019$) differentiate higher and lower achieving groups of schools. The most powerful variable was S.R.S.O.F. followed by S.P.S.A.N., a much less powerful predictor. S.P.F.E.E. and S.P.P.E.E. did not appear to be very powerful discriminators of achievement within this group of variables, for this stratum.

2. Among the predominantly black-urban schools, the 4 student variables did not significantly ($p = <0.5084$) differentiate higher and lower acheiving groups of schools. Of the four factors, the most powerful predictor was S.R.S.O.F. followed by S.P.F.E.E. and S.P.P.E.E., much less powerful predictors. S.P.S.A.N. did not appear to be a very powerful discriminator of achievement within this group of variables, for this stratum.

3. Among the rural schools, the 4 student variables did not significantly ($p = <0.2401$) discriminate higher and lower achieving groups of schools. Of the four factors the most powerful predictor was S.R.S.O.F. followed by S.P.P.E.E., almost as powerful a predictor, and S.P.F.E.E., which was much less powerful. S.P.S.A.N. appeared to have very little power in discriminating achievement within this group of variables, for this stratum.

4. Among the predominantly white-urban schools, teacher group 1 variables significantly ($p = <0.003$) differentiate higher and lower achieving schools. The range of predictive power between variables is not great, the order of importance being: T.F.E.E., T.R.P.I.S., and T.P.E.E. For this stratum, the three group 2-teacher variables did not significantly ($p = <0.8875$) discriminate between higher and lower achieving groups of schools. Of the three factors the most powerful was T.P.P.S.P., followed by T.R.F.J.S., a much less powerful predictor and T.P.S.A.I., a very weak discriminator of higher and lower academic achievement within this group of variables, for this stratum.

5. Among the predominantly black-urban schools, teacher group 1 variables did not significantly ($p = <0.6538$) differentiate higher and lower achieving schools. The range of predictive power between variables was also not great, the order of importance being T.F.E.E., T.P.E.E., and T.R.P.I.S. For this stratum, the three group 2- teacher variables also did not significantly ($p = <0.5897$) discriminate between higher and lower achieving groups of schools. Of the three factors,

the most powerful was T.P.S.A.I. followed by T.P.P.S.P., much less powerful and T.R.F.J.S., a very weak discriminator of higher and lower academic achievement within this group of variables for this stratum.

6. Among the rural schools, Group 1 - teacher variables significantly (p = 0.0590) differentiate higher and lower achieving schools. The most powerful discriminator is T.F.E.E., followed closely by T.R.P.I.S., and finally by T.P.E.E., although nowhere as powerful a variable as others still appears to differentiate achievement groups. Group 2 - teacher variables are not significant (p = 0.4831) discriminators of achievement but the most powerful variable of the group is T.P.P.S.P., followed by T.P.S.A.I., less powerful and T.R.F.J.S., a weak discriminator of achievement for this stratum.

Comparative Analysis of White and Black Schools

This analysis used both student scales and factors as dependent variables to analyze the difference between white and black elementary schools. The effects of SES and achievement level were minimized by sample selection but not completely controlled.

Due to the small sample size, the dependent variables were divided into three groups: Variable Group A included five student scales; Reported Student Press for Competition, Importance of Self-Identity Student, Academic Norms, Sense of Control, and Reported Teacher Press for Competition. Variable Group B included five student scales; Perceived Peer Expectations and Evaluations, Perceived Teacher Expectations and Evaluations, Perceived Parent Expectations and Evaluations, and Self-Concept of Academic Ability and Perceived Principal Expectations and Evaluations. Variable Group C included the four student factors; Student Perceived Present Evaluations-Expectations, Student Perceived Schools Academic Norms, Student Reported Sense of Futility, and Student Perceived Future Evaluations-Expectations.

On the basis of this analysis, the following conclusions were reached:

1. Within variable group A, the five student scales significantly (p = .004) differentiated between white and black schools. Reported teacher press for competition was the only univariate which contributed (p = .0006) significantly to the difference. Black schools reported a higher Reported teacher press for competition than white schools.
2. Within variable group B the five student scales significantly (p = .05) differentiated between white and black schools. Self-concept of academic ability (p = .002), Perceived peer expectations and evaluations (p = .05), and Perceived teacher expectations and evaluations (p = .04) were the univariates which contributed significantly to the black and white difference. Black schools reported a higher Self-concept of academic ability, a higher Perceived peer expectations and evaluations, and a higher Perceived teacher expectations and evaluations than white schools.
3. Within Variable group C, the four student factors significantly (p = .003) differentiated between white and black schools. Student perceived present evaluations-expectations (p = .001), and Student reported sense of futility (p = .001) were the univariates which contributed significantly to the black and white difference. White schools reported a higher Student perceived present evaluations-expectations and black schools reported a higher Sense of futility.

Comparative Observations of the Schools

Employed within this analysis were: (1) tables of factor scores showing school rankings within individual matches, within stratum and within the entire sample; (2) graphs representing school mean factor scores within each stratum and (3) an observational case comparison of five pairs of schools matched on S.E.S., race, and urban-rural community type, but significantly differing in achievement as measured by the Michigan State School Assessment Achievement Index. This analysis was of a highly speculative nature attempting to relate the personal observations of the research staff with respect to : (1) the community, (2) the building, (3) the curriculum, (4) the principal, and (5) the relationship between the community and the school. These observations suggest the following:

1. Student reported sense of futility is lower for higher achieving schools in all white-urban, black-urban, and rural comparisons.
2. Student perceptions of future evaluations-expectations are more positive for higher achieving schools among all black- and white-urban pairs, but not for the rural schools.
3. Teacher present evaluations-expectations are more positive in all higher achieving schools, among all the white-urban pairs and all but one of the black-urban pairs.
4. Teacher future evaluations-expectations of students are consistently more positive in the higher achieving of each pair of white-urban schools and in the high achieving black schools of each pair matched on SES.
5. The teacher present evaluations-expectations factor is generally more positive in our rural sample than in urban schools, but the teacher future evaluations-expectations factor is generally lower in the rural schools than in the urban schools.

6. Teacher reported push of individual students is consistently lower in the higher achieving schools within the white-urban matched pairs, and all but one of the black-urban matched pairs.

7. Job satisfaction appears to have little relationship to achievement, but it does appear to have a relationship to SES among white and black-urban schools. Interestingly enough, teachers express higher satisfaction in lower SES black schools than they do in higher SES black schools, but teachers express greater job satisfaction in higher SES white schools than they do in lower SES white schools.

8. Teacher perception of student improvability does not appear to differentiate the higher achieving white schools, but it does appear to differentiate between higher and lower achieving black-urban schools.

By the observational comparison of the five pairs of schools, we were able to specualte on the amount of psychic-integration between the school and the community and that a staff sharing certain common beliefs, might be important in the creation of a social-psychological normative climate that encourages high academic achievement.

Conclusions and Implications

The results of the varied analyses of the data in this study have identified school climate variables that may effect achievement. Student reported sense of futility, Student perceived present evaluations-expectations, Teacher reported push of individual students, and Teacher perceived future evaluations-expectation were all clearly related to mean school achievement in several types of analysis. Two of these variables, Student reported sense of futility and Student perceived present evaluations-expectations, also significantly differentiated between white and black schools. The basic objective of this study-the identification of elementary school social environment factors that may explain differences in school achievement when socio-economic status and racial composition is controlled - has been achieved. The findings clearly supplement those of earlier studies in the area.

The Equality of Educational Opportunity study (Coleman,1966) clearly demonstrated that social class and racial composition were related to mean school achievement, but did not separate these context effects from social climate effects with which they are correlated. McDill and associates (McDill, Meyers and Rigsby, 1967) demonstrated that some social-cultural climate variables accounted for most of the variance in high school math achievement usually attributed to social composition or context. This study extends the line of research into the elementary school and broadens somewhat the range of climate variables considered.

We recognize some limitations of this research; the non-randomness of school selections; the limited number of cases; and the limited range of possible variables that may explain differences in achievement, studied and/or controlled. This research is not longitudinal or experimental in nature as called for by Dyer and others (Moynihan and Mosteller,1972). We recognize the difficulty of manipulating school populations for experimental treatments or keeping them intact for longitudinal studies. This after the fact examination of the differences in school environment with composition controlled may make a significant contribution to our understanding of what effects school learning.

Since our findings are not the product of tightly controlled experiments, we present them with some caution. We think, however, they indicate some dimensions of elementary school social climate which may explain much of the school to school differences in achievement. If these findings are confirmed by studies of representative samples of schools, they demonstrate that contrary to Jencks (1972) schools can make a difference in the level of school achievement. Furthermore, poor and minority group students may achieve at high levels if school climates productive of such achievement are created.

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APPENDIX A

State Assessment SES Index Questions

SOCIO-ECONOMIC STATUS QUESTIONS USED IN STATE ASSESSMENT TEST 1969-1970

General Information Questions

Does your family have a dictionary?

(A) Yes
(B) No
(C) I don't know

Does your family have an encyclopedia?

(A) Yes
(B) No
(C) I don't know

Does your family have a vacuum cleaner?

(A) Yes
(B) No
(C) I don't know

Does your family have a typewriter?

(A) Yes
(B) No
(C) I don't know

Does your family have a dishwashing machine?

(A) Yes
(B) No
(C) I don't know

How many cars does your family have? (Don't count trucks.)

(A) None
(B) One
(C) Two or more

Do you have your own wrist watch?

(A) Yes
(B) No

Has anyone in your family traveled in an airplane in the last year?

(A) Yes
(B) No
(C) I don't know

How much education does your father have?

(A) Grade school--Grades 1-8
(B) High school--Grades 9-12
(C) College or special training after high school
(D) I don't know

How much education does your mother have?

(A) Grade school--Grades 1-8
(B) High school--Grades 9-12
(C) College or special training after high school
(D) I don't know

How many different schools have you gone to since you started first grade? Count only the schools which you went to during the day.

(A) One--only this one
(B) Two
(C) Three
(D) Four
(E) Five or more

What is the highest grade you want to finish in school?

(A) I don't want to go to school any more
(B) I only want to finish high school
(C) I want to go to a special school, like a nursing or business school
(D) I want to go to college

Are you planning to go to college?

(A) Yes
(B) No
(C) I'm not sure

APPENDIX B

Comparison of Duncan SES Scale
with State Assessment SES Index
between the 24 sampled schools

TABLE 22--Duncan's Socio-Economic Index Score in Schools in Comparison with the State Assessment Socio-Economic Score of Schools

School	Duncan SES Index	SES Level	State Assessment SES Score
1	50.5	High	55.1
2	41.6	High	55.2
3	51.8	High	54.4
4	48.7	High	54.9
5	30.0	High	49.4
6	50.2	High	50.1
7	32.4	Low	43.2
8	26.0	Low	44.9
9	36.5	Low	46.6
10	29.0	Low	46.8
11	64.9	High	61.3
12	40.4	High	52.9
13	**	High	50.0
14	17.8	High	49.2
15	20.1	Low	43.8
16	18.8	Low	46.7
17	28.7	Low	47.0
18	19.1	Low	46.7
19	29.1	High	53.2
20	35.3	Low	44.6
21	32.8	Low	42.9
22	21.3	Low	44.3
23	23.6	High	50.7
24	29.2	Low	47.8
25	17.7	Low	37.8

**School 13 not available for data collection.

APPENDIX C

Factor Items and Loadings

Factor 1. - Student Perceived Present Evaluations-Expectations (S.P.P.E.E.)

Proportion of Variance = .1117

	Factor Loading Score
Would your mother and father say that your grades would be with the best, same as most, or below most of the students when you finish high school?	-.6700
The best	..... 1.
Same as most	..... 2.
Below most	..... 3.
Would your best friend say that your grades would be with the best, same as most, or below most of the students when you graduate from high school?	-.6405
With the best	..... 1.
Same as most	..... 2.
Below most	..... 3.
Would your teacher say that your grades would be with the best, same as most, or below most of the students when you graduate from high school?	-.6378
With the best	..... 1.
Same as most	..... 2.
Below most	..... 3.
How good of a student do your parents expect you to be in school?	-.6297
One of the best	..... 1.
Better than most of the students	..... 2.
Same as most of the students	..... 3.
Not as good as most of the students	..... 4.
They don't really care	..... 5.
Think of your teacher. Would your teacher say you can do school work better, the same, or poorer than other people your age?	-.6130
Better	..... 1.
The same	..... 2.
Poorer	..... 3.

Forget how your teachers mark your work. How good do you think your own work is? -.6028

Excellent ..... 1.
Good ..... 2.
About the same as most of the students ..... 3.
Below most of the students ..... 4.
Poor ..... 5.

How good of a student does the teacher you like the best expect you to be in school? -.6028

One of the best ..... 1.
Better than most of the students ..... 2.
Same as most students ..... 3.
Not as good as most students ..... 4.
She doesn't really care ..... 5.

When you finish high school, do you think you will be one of the best students, about the same as most of the students, or below most of the students? -.5904

One of the best ..... 1.
About the same as most of the students ..... 2.
Below most of the students ..... 3.

Think of your mother and father. Do your mother and father say you can do your school work better, the same, or poorer than your friends? -.5781

Better ..... 1.
Same as most ..... 2.
Poorer ..... 3.

Think of your best friend. Would your best friend say you can do school work better, the same, or poorer than other people your age? -.5723

Better ..... 1.
The same ..... 2.
Poorer ..... 3.

If you went to college, do you think you would be one of the best students, about the same as most of the students, or below most of the students? -.5481

One of the best ..... 1.
About the same as most of the students ..... 2.
Below most of the students ..... 3.

Think of the students in your class. Do you think you can do school work better, the same, or poorer than the other students in your class?	-.5407

Better	..... 1.
The same	..... 2.
Poorer	..... 3.

What marks do you think you really can get if you try?	-.5272

Mostly A's	..... 1.
Mostly B's	..... 2.
Mostly C's	..... 3.
Mostly D's	..... 4.
Mostly E's	..... 5.

How good of a student does your best friend expect you to be in school?	-.5218

One of the best	..... 1.
Better than most of the students	..... 2.
Same as most students	..... 3.
Not as good as most students	..... 4.
He doesn't really care	..... 5.

Think of your friends. Do you think you can do school work better, the same, or poorer than your friends?	-.5200

Better	..... 1.
The same	..... 2.
Poorer	..... 3.

What grades does your teacher think you can get?	-.5139

Mostly A's	..... 1.
Mostly B's	..... 2.
Mostly C's	..... 3.
Mostly D's	..... 4.
Mostly E's	..... 5.

What grades does your best friend think you can get?	-.5031

Mostly A's	..... 1.
Mostly B's	..... 2.
Mostly C's	..... 3.
Mostly D's	..... 4.
Mostly E's	..... 5.

What grades do your mother and father think you can get?	-.4335

Mostly A's	..... 1.
Mostly B's	..... 2.
Mostly C's	..... 3.
Mostly D's	..... 4.
Mostly E's	..... 5.

Factor 2. - Student Perceived Future Evaluations-Expectations (S.P.F.E.E.)

Proportion of Variance = .0733

How far do you think your best friend believes you will go in school? -.6367

Finish grade school ..... 1.
Go to high school for a while ..... 2.
Go to college for a while ..... 3.
Finish college ..... 4.

Do they think you could finish college (mother & father)? .6103

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

Does your best friend think you could finish college? .6064

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

Remember you need more than four years of college to be a teacher or doctor. Do your mother and father think you could do that? .5978

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

Remember you need more than four years of college to be a teacher or doctor. Does your best friend think you could do that? .5865

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

How far do you think your parents believe you will go in school? -.5789

Finish grade school ..... 1.
Go to high school for a while ..... 2.
Finish high school ..... 3.
Go to college for a while ..... 4.
Finish college ..... 5.

If you could go as far as you wanted in school, how far would you like to go? .5476

Finish grade school ..... 1.
Go to high school for a while ..... 2.
Finish high school ..... 3.
Go to college for a while ..... 4.
Finish college ..... 5.

How far do you think the teacher you like best believes you will go in school? -.5428

Finish grade school ..... 1.
Go to high school for a while ..... 2.
Finish high school ..... 3.
Go to college for a while ..... 4.
Finish college ..... 5.

Remember you need more than four years of college to be a teacher or doctor. Does your teacher think you could do that? .5242

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

Does your teacher think you could finish college? .5237

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

If you want to be a doctor or a teacher you need more than four years of college. Do you think you could do that? .4234

Yes, with no difficulty at all ..... 1.
Yes, as long as I work hard ..... 2.
Yes, but I will probably have a lot of difficulty ..... 3.
No, it will be too difficult ..... 4.

Do you think you could finish college? .4108

Yes, with no difficulty at all ..... 1.
Yes, as long as I work hard ..... 2.
Yes, but I will probably have a lot of difficulty ..... 3.
No, it will be too difficult ..... 4.

If most of the students here could go as far as they wanted in school how far would they go? -.3939

Finish grade school	..... 1.
Go to high school for a while	..... 2.
Finish high school	..... 3.
Go to college for a while	..... 4.
Finish college	..... 5.

Factor 3. - Student Reported Sense of Futility (S.R.S.O.F.)

Proportion of Variance = .0549

Factor Loading Score

You have to be lucky to get good grades in this school. .5650

Strongly agree	..... 1.
Agree	..... 2.
Disagree	..... 3.
Strongly disagree	..... 4.

People like me will never do well in school even though we try hard. .5347

Strongly agree	..... 1.
Agree	..... 2.
Disagree	..... 3.
Strongly disagree	..... 4.

Of the teachers that you know in this school how many don't care how hard the student works as long as he passes? .5332

Almost all of the teachers	..... 1.
Most of the teachers	..... 2.
Half of the teachers	..... 3.
Some of the teachers	..... 4.
Almost none of the teachers	..... 5.

Of the teachers that you know in this school how many don't care if the students get bad grades? .5215

Almost all of the teachers	..... 1.
Most of the teachers	..... 2.
Half of the teachers	..... 3.
Some of the teachers	..... 4.
Almost none of the teeachers	..... 5.

Of the teachers that you know in this school how many make the students work too hard? .4831

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

In this school students like me don't have any luck. .4258

Strongly agree ..... 1.
Agree ..... 2.
Disagree ..... 3.
Strongly disagree ..... 4.

How many teachers in this school tell students to try and get better grades than their classmates? .4067

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

People like me will not have much of a chance to do what we want to in life. .3789

Strongly agree ..... 1.
Agree ..... 2.
Disagree ..... 3.
Strongly disagree ..... 4.

I can do well in school if I work hard. -.3390

Strongly agree ..... 1.
Agree ..... 2.
Disagree ..... 3.
Strongly disagree ..... 4.

How many students in this school don't care if they get bad grades. .3279

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

If the teachers in this school think a student can't do good work how many will try to make him work hard anyway? .2568

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

Of the teachers that you know in this school, how many think it is not good to ask more work from a student than he is able to do? .2340

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

Factor 4. - Student Perception of School Academic Norms (S.P.S.A.N.)

Proportion of Variance = .0682

How important do you think most of the students in this school feel it is to do well in school work? -.5446

Almost everybody thinks it is the most important thing you can do. ..... 1.
Most students think it is quite important to do well ..... 2.
Doing well in school work is a good thing but other things are important too. ..... 3.
Most students don't seem to care how well they do, but it's okay for others to do well. ..... 4.
Most students don't seem to care how good they do, but they don't like other students to do good. ..... 5.

How important do most of the students in this class feel it is to do well in school work? -.5310

Almost everybody thinks it is the most important thing you can do. ..... 1.
Most students think it is quite important to do well ..... 2.
Doing well in school work is a good thing but other things are important too. ..... 3.
Most students don't seem to care how well they do, but it's okay for others to do well. ..... 4.
Most students don't seem to care how good they do, but they don't like other students to do good. ..... 5.

How many of the students in this school do you think the principal believes will go to college? -.5067

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How many students in this school do you think the principal believes can get high grades? -.4935

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How many students in this school do you think the principal believes will finish college? -.4901

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How many students in this school do you think the principal believes will finish high school? -.4799

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

If your best friend told you that you were a poor student, how would you feel? -.4667

I'd feel very bad ..... 1.
I'd feel somewhat bad ..... 2.
It wouldn't bother me very much ..... 3.
It wouldn't bother me at all ..... 4.

How do you think most of the students in this school react when one of you does a bad job on school work? -.4609

They feel badly and want to help him (her) do better ..... 1.
They feel sorry, but don't say anything ..... 2.
They really don't care ..... 3.
They are secretly happy that it happened ..... 4.

If the teacher you like the best told you that you were a poor student, how would you feel? -.4554

I'd feel very bad ..... 1.
I'd feel somewhat bad ..... 2.
It wouldn't bother me very much ..... 3.
It wouldn't bother me at all ..... 4.

If your parents told you that you were a poor student, how would you feel? -.4499

I'd feel very bad ..... 1.
I'd feel somewhat bad ..... 2.
It wouldn't bother me very much ..... 3.
It wouldn't bother me at all ..... 4.

How many students in this school try hard to get a good grade on their weekly tests? -.4393

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How many students in this school will work hard to get a better grade on their weekly tests than their friends do? -.4362

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How many students in this school do more studying for weekly tests than they have to? -.4022

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How do you think your principal would grade the work of the students in this school, compared to other schools? -.3952

Would grade it much better ..... 1.
Would grade it somewhat better ..... 2.
Would grade it the same ..... 3.
Would grade it somewhat lower ..... 4.
Would grade it much lower ..... 5.

How important is it to you to be a good student? -.3843

It's the most important thing I can do ..... 1.
It's important, but other things are just as important ..... 2.
It's important, but other things are more important ..... 3.
It's not very important ..... 4.

Of the teachers that you know in this school, how many tell students to try hard to do better on tests? -.3643

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

Of the teachers that you know in this school, how many tell students to do extra work so that they can get better grades. -.3524

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

Think about the boys and girls you play with at recess or after school. How often do they read in their free time? -.2750

Very often ..... 1.
Quite a bit ..... 2.
Sometimes, but not very much ..... 3.
Seldom ..... 4.
Almost never ..... 5.

Of the teachers that you know in this school, how many believe that students should be asked to do only work which they are able to do? -.2705

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

When you and your friends are together after school or or week-ends, how often do you talk about your school work? -.1879

Very often ..... 1.
Quite a bit ..... 2.
Sometimes, but not very much ..... 3.
Seldom ..... 4.
Almost never ..... 5.

Factor 5. - Teacher Present Evaluations-Expectations of Students in their School (T.P.E.E.)

Proportion of Variance = .1938

Factor Loading Scores

What percent of the students in this school do you expect to complete high school? .7537

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in this school do you think the principal expects to complete high school? .7387

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in this school would you say want to complete high school? .6745

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

How many parents in this school service area expect their children to complete high school? .6310

1. almost all of the parents
2. most of the parents
3. about half of the parents
4. some of the parents
5. almost none of the parents

What percent of the students in your class would you say want to complete high school? .5969

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

Completion of high school is a realistic goal which you set for what percentage of your students? .5916

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in your class do you expect to complete high school? .5828

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

On the average what level of achievement can be expected of the students in this school? .5012

1. much above national norm
2. slightly above national norm
3. approximately at national norm
4. slightly below national norm
5. much below national norm

On the average what level of achievement can be expected of the students in your class? .4168

1. much above national norm
2. slightly above national norm
3. approximately at national norm
4. slightly below national norm
5. much below national norm

How many teachers in this school aren't concerned how hard most students work as long as they pass? -.3124

1. almost all of the teachers
2. most of the teachers
3. half of the teachers
4. some of the teachers
5. almost none of the teachers

Not High Load (but .3500 or higher)

How would you rate the academic ability of the students in this school compared to other schools? .4970

1. ability here is much higher
2. ability here is somewhat higher
3. ability here is about the same
4. ability here is somewhat lower
5. ability here is much lower

How many students in this school try hard to improve on previous work? .3705

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

Factor 6. - Teacher Future Evaluations-Expectations of Students in their School (T.F.E.E.)

Proportion of Variance = .1690

What percent of the students in this school do you expect to complete college? .8427

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in your class do you expect to complete college?

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in this school do you think the principal expects to complete college? .7946

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in this school do you think the principal expects to attend college? .7925

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in this school do you expect to attend college? .7900

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in your class do you expect to attend college? .7765

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

Completion of college is a realistic goal which you set for what percentage of your students? .6933

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

How many of the students in this school are capable of getting mostly A's and B's? .6650

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

How many parents in this school service area expect their children to complete college? .6147

1. almost all of the parents
2. most of the parents
3. about half of the parents
4. some of the parents
5. almost none of the parents

How many students in this school do you think the principal believes are capable of getting mostly A's and B's? .7946

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

How do you think the principal rates the academic ability of students in this school, compared with other schools? .6062

1. rates it much better
2. rates it somewhat better
3. rates it the same
4. rates it somewhat lower
5. rates it much lower

How many students in your class are capable of getting mostly A's and B's? .5912

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

How would you rate the academic ability of the students in this school compared to other schools? .5259

1. ability here is much higher
2. ability here is somewhat higher
3. ability here is about the same
4. ability here is somewhat lower
5. ability here is much lower

What percent of the students in your *class* would you say want to go to college? .5223

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in this school would you say want to go to college? .5175

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

Not High Load (but .3500 or higher)

On the average what level of achievement can be expected of the students in this *school*? .4345

1. much above national norm
2. slightly above national norm
3. approximately at national norm
4. slightly below national norm
5. much below national norm

What percent of the students in this *school* do you expect to complete high school? .3549

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in your *class* do you expect to complete high school? .3641

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

Completion of high school is a realistic goal which you set for what percentage of your students? .3661

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

Factor 7. - Teacher Perception of Parent-Student Push for Educational Achievement (T.P.P.S.P.)

Proportion of Variance = .1012

Factor Loading Score

How many students in this school don't care when other students do much better than they do? -.8286

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many students in your class don't care when other students do much better than they do? .7493

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many of the parents in this school service area don't care if their children obtain low grades? -.6708

1. almost all of the parents
2. most of the parents
3. about half of the parents
4. some of the parents
5. almost none of the parents

The parents of this school service area are deeply concerned that their children receive a top quality education. -.6199

1. strongly agree
2. agree
3. not sure
4. disagree
5. strongly disagree

How many students in this school are content to do less than they should? -.5728

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many students in your class are content to do less than they should? .5648

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

The parents in this school service area regard this school primarily as a "baby-sitting" agency. -.4985

1. strongly agree
2. agree
3. not sure
4. disagree
5. strongly disagree

How many of the parents in this school service area like feedback from the principal and teachers on how their children are doing in school? -.4339

1. almost all of the parents
2. most of the parents
3. about half of the parents
4. some of the parents
5. almost none of the parents

Not High Load (but .3500 or higher)

How many students in this school will try hard to do better on tests than their friends do? -.4929

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many students in your class will try hard to do better on tests than their classmates do? -.5848

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many of the parents in this school service area expect their children to complete high school? -.3749

1. almost all of the parents
2. most of the parents
3. about half of the parents
4. some of the parents
5. almost none of the parents

Factor 8. - Teachers Reported Push of Individual Students (T.R.P.I.S.)

Proportion of Variance = .0586

It is unfair to demand more work from a student than he is capable of giving. .7569

1. strongly agree
2. agree
3. not sure
4. disagree
5. strongly disagree

If you think a student is not able to do some of the school work you won't try to push him very hard. .7076

1. strongly agree
2. agree
3. not sure
4. disagree
5. strongly disagree

For most students you are careful not to push them to their frustration level. .6906

1. strongly agree
2. agree
3. not sure
4. disagree
5. strongly disagree

For those students who do not have the resources which will allow them to go to college, you are careful not to promote aspirations in them which probably cannot be fulfilled.	.6117

1. strongly agree
2. agree
3. not sure
4. disagree
5. strongly disagree

Not High Load (but .3500 or higher)

On the average what level of achievement can be expected of the students in your class?	.3549

1. much above national norm
2. slightly above national norm
3. approximately at national norm
4. slightly below national norm
5. much below national norm

Factor 9. - Teachers Reported Feeling of Job Satisfaction (T.R.F.J.S.)

Proportion of Variance = .0670

	Factor Loading Score
If someone were to offer you an interesting and secure non-teaching job for $1,000 more a year, how seriously would you consider taking the job?	-.7182

1. very seriously
2. somewhat seriously
3. not very seriously
4. not at all

If someone were to offer you an interesting and secure non-teaching job for $3,000 more a year, how seriously would you consider taking the job?	-.6769

1. very seriously
2. somewhat seriously
3. not very seriously
4. not at all

How much do you enjoy your teaching responsibilities in this school? .5405

1. very much
2. much
3. average
4. little
5. not at all

Not High Load (but .3500 or higher)

What percent of the students in this school would you say want to go to college? .4537

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

What percent of the students in your class would you say want to go to college? .4537

1. 90% or more
2. 70% or more
3. 50% or more
4. 30% or more
5. less than 30%

The parents in this school service area regard this school primarily as a "baby-sitting" agency. .3520

1. strongly agree
2. agree
3. not sure
4. disagree
5. strongly disagree

How many of the parents in this school service area like feed-back from the principal and teachers on how their children are doing in school? .4013

1. almost all of the parents
2. most of the parents
3. about half of the parents
4. some of the parents
5. almost none of the parents

Factor 10. - Teacher Perception of Student Academic Improvability (T.P.S.A.I.)

Proportion of Variance = .0765

How many students in this school will seek extra work so that they can get better grades? .6305

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many students in your class will try hard to do better on tests than their classmates do? .6238

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many students in this school will try hard to do better on tests than their friends do? .6027

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many students in your class will seek extra work so that they can get better grades? .5997

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many teachers encourage students to seek extra work so that the students can get better grades? .5785

1. almost all of the teachers
2. most of the teachers
3. about half of the teachers
4. some of the teachers
5. almost none of the teachers

How many students in your class try hard to improve on previous work? .5561

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How often do you stress to your students the necessity of a post high school education for a good job and/or a comfortable life? .5125

1. very often
2. often
3. sometimes
4. seldom
5. never

How many students in this school try hard to improve on previous work? .4777

1. almost all of the students
2. most of the students
3. about half of the students
4. some of the students
5. almost none of the students

How many teachers in this school encourage students to try hard to improve on previous test scores? .3951

1. almost all of the teachers
2. most of the teachers
3. about half of the teachers
4. some of the teachers
5. almost none of the teachers

APPENDIX D

Factor Correlations Matrix for Schools Between
SES, Race, Urban-Rural Community, Achievement,
the four student factors and the six teacher factors.

TABLE [illegible]4.--Matrix of Correlation Coefficients of Variables within Total Sample

	A.	B.	C.	D.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
A S.E.S.	1.000000													
B. Race	-0.03833	1.000000												
C. Urb-ru	-0.22231	-0.41176	1.00000											
D. Achieve.	0.13179	-0.47010	0.29575	1.00000										
1. S.P.P.E.E.	0.07413	-0.76011	0.36177	0.49549	1.00000									
2. S.P.F.E.E.	0.51964	0.13451	-0.27661	0.39671	-0.04976	1.00000								
3. S.R.S.O.F.	-0.19209	0.60872	-0.19496	-0.82225	-0.69654	-0.34691	1.00000							
4. S.P.O.A.N.	-0.14383	-0.17406	-0.02602	0.32383	0.21741	0.31291	-0.31291	1.00000						
5. T.P.E.E.	0.02367	-0.42302	0.49771	0.77377	0.42349	0.25833	-0.66724	0.09909	1.00000					
6. T.F.E.E.	0.30688	0.32323	-0.34922	0.34164	-0.04579	0.63176	-0.12270	0.34478	0.09198	1.00000				
7. T.P.P.S.P.	-0.23343	0.15427	0.03459	0.14125	0.18525	0.28919	-0.02632	0.14071	0.09848	0.07910	1.00000			
8. T.R.P.I.S.	0.10345	0.67685	-0.32639	-0.52669	-0.49738	0.09780	0.48842	0.04834	0.43182	0.29099	-0.26838	1.00000		
9. T.R.F.J.S.	0.37776	0.05221	-0.40434	0.06183	0.00899	0.18340	-0.19436	0.07491	-0.08246	0.10379	0.18687	-0.01110	1.00000	
10. T.P.S.A.I.	-0.38387	-0.00029	0.41218	0.18588	0.23264	-0.16117	-0.24021	0.03214	0.29580	0.05654	0.27159	0.06061	-0.17027	1.000000

Variables:

A. Socio-Economic Status: 1=Low, 2=High (S.E.S.)
B. Predominant Race of the School: 1=White, 2=Black (Race)
C. Urban-Rural Community Type: 1=Urban, 2=Rural
D. Achievement on Michigan State Assessment Index (Achieve.)

1. Students' Perception of Present Evaluations-Expectations (S.P.P.E.E.)
2. Students' Perception of Future Evaluations-Expectations (S.P.F.E.E.)
3. Students Reported Sense of Futility (S.R.S.O.F.)
4. Students' Perception of Schools Academic Norms (S.P.S.A.N.)

5. Teacher Present Evaluations-Expectations (T.P.E.E.)
6. Teacher Future Evaluations-Expectations (T.F.E.E.)
7. Teacher Perception of Parent-Student Achievement Push (T.P.P.S.P.)
8. Teacher Reported Push of Individual Students (T.R.P.I.S.)
9. Teacher Reported Feelings of Job Satisfaction (T.R.F.J.S.)
10. Teacher Perception of Student Academic Improvability (T.P.S.A.I.)

APPENDIX E

School Mean Factor Scores

TABLE 24.--Mean School Factor Scores for Student Perceived Present Evaluations-Expectations

		Ach.	Score	Match High-Low	Rank Strata	Rank Sample	Standard Deviation
WHITE	H. SES	01-high	0.30531859	+	1	3	0.870780
		02-low	-0.34907146	-	10	20	0.928063
		03-high	0.11724079	-	4	7	0.928013
		04-low[a]	0.16715715	+	3	6	0.880834
		05-high	0.11648906	+	5	8	0.842136
		06-low	-0.05306332	-	9	15	1.022954
	L. SES	07-high	0.20983262	+	2	4	1.017824
		08-low	0.05673731	-	7	11	0.925299
		09-high	0.10258272	+	6	9	0.939203
		10-low	0.00938668	-	8	13	0.898545
BLACK	H. SES	11-high	-0.41525058	-	6	23	0.902543
		12-low[a]	-0.37914961	+	5	22	0.998344
		14-low	-0.19143907		1	16	1.072251
	L. SES	15-high	-0.20997296	+	2	17	0.969081
		16-low	-0.41751724	-	7	24	0.977974
		17-high	-0.24100206	+	3	19	1.112676
		18-low	-0.35601647	-	4	21	0.977552
RURAL	H.SES	19-high	0.19988027		3	5	0.880629
		23-low[a]	0.30929335		2	2	0.951676
	L.SES	20-high	0.05583412		5	12	0.475124
		21-high	0.06845720		4	10	1.036396
		22-high	-0.03631221		6	14	0.979889
		24-low[a]	0.31492059		1	1	1.220018
		25-low	-0.21966332		7	18	1.132985

Note: Higher score denotes a more positive student perception of the present evaluations-expectations held within the social system of the school.

[a] Lower achieving school with a more positive present evaluations-expectations.

TABLE 25.--Mean School Factor Scores for Student Perceived Future Evaluations-Expectations

		Ach.	Score	Match High-Low	Rank Strata	Rank Sample	Standard Deviation
WHITE	H.SES	01-high	0.29803626	+	3	5	0.845496
		02-low	0.05537891	-	6	11	1.066728
		03-high	0.41092891	+	1	2	0.927898
		04-low	0.26647819	-	4	6	0.965846
		05-high	0.36963399	+	2	4	1.004134
		06-low	-0.28618813	-	10	21	1.073251
	L.SES	07-high	0.10148822	+	5	9	0.934496
		08-low	-0.00682743	-	7	15	0.981963
		09-high	-0.17745390	+	8	19	1.042200
		10-low	-0.25081607	-	9	20	1.086380
BLACK	H.SES	11-high	0.48670769	+	1	1	0.784465
		12-low	0.26195179	-	3	7	0.945558
		14-low	-0.13185563		6	17	1.141045
	L.SES	15-high	-0.11669975	+	5	16	0.943229
		16-low	-0.31990246	-	7	22	1.098908
		17-high	0.38482227	+	2	3	1.063943
		18-low	0.07781838	-	4	10	0.940151
RURAL	H.SES	19-high	0.23677040		1	8	0.881040
		23-low	0.02781378		4	14	0.724016
	L.SES	20-high [a]	-0.15327576		5	18	1.017324
		21-high[a]	-0.35702191		7	24	1.057244
		22-high	0.04010356		2	12	1.130119
		24-low	-0.32158663		6	23	1.130519
		25-low[a]	0.03920245		3	13	1.363097

Note: Higher score denotes a more positive student perception of the future evaluations-expectations held within the social system of the school.

[a] Lower achieving school with a more positive future evaluation-expectation, and higher achieving school with a more negative evaluation-expectation for future.

TABLE 26--Mean School Factor Scores for Student Reported Sense of Futility

		Ach.	Score	Match High-Low	Rank Strata	Rank Sample	Standard Deviation
WHITE	H. SES	01-high	-0.62019910	-	6	17	0.812212
		02-low	-0.23728543	+	4	9	1.047918
		03-high	-0.64211503	-	7	18	0.749989
		04-low	-0.50780024	+	5	16	0.745208
		05-high	-0.89842529	-	10	23	0.762867
		06-low	-0.16376390	+	1	7	1.000770
	L. SES	07-high	-0.87527320	-	9	22	0.671110
		08-low	-0.22147609	+	2	8	1.131169
		09-high	-0.72494195	-	8	19	0.830495
		10-low	-0.24329433	+	3	10	1.050999
BLACK	H. SES	11-high	-0.28768347	-	6	12	0.949259
		12-low	-0.02319064	+	5	6	0.968904
		14-low	0.73460769		1	1	0.928284
	L. SES	15-high	0.06953242	-	4	5	1.109394
		16-low	0.67366694	+	2	2	0.931151
		17-high	-0.31253803	-	7	13	1.041882
		18-low	0.11351697	+	3	4	0.993447
RURAL	H.SES	19-high	-1.00046869		7	24	0.536151
		23-low[a]	-0.75975700		5	20	0.742945
	L. SES	20-high	-0.82664562		6	21	1.129554
		21-high	-0.40013792		4	15	0.891716
		22-high	-0.37334322		3	14	0.745248
		24-low	-0.25139548		2	11	0.902460
		25-low	0.49827233		1	3	1.466133

Note: Higher score denotes a greater student reported sense of futility in the social system of the school.

[a] Lower achieving school with a lower student reported sense of futility.

TABLE 27.--Mean School Factor Scores of Student Perceived School Academic Norms

		Ach.	Score	Match High-Low	Rank Strata	Rank Sample	Standard Deviation
WHITE	H. SES	01-high	0.01221810	+	7	12	0.851117
		02-low	-0.04398397	-	8	13	1.023701
		03-high	-0.12814408	-	9	17	0.903671
		04-low[a]	0.09200696	+	5	8	0.836193
		05-high	0.38798929	+	1	3	0.726971
		06-low	0.10461594	-	4	7	0.888170
	L. SES	07-high	-0.21523780	-	10	22	0.793085
		08-low[a]	0.18999434	+	3	6	0.930436
		09-high	0.27614048	+	2	4	0.830925
		10-low	0.05882963	-	6	10	1.190013
BLACK	H. SES	11-high	-0.23409775	-	7	23	1.092645
		12-low[a]	-0.17120988	+	6	19	1.014009
		14-low	-0.16069394		5	18	1.312951
	L. SES	15-high	-0.10202500	+	3	15	1.120225
		16-low	-0.11235000	-	4	16	1.020740
		17-high	0.53895811	+	1	2	0.974389
		18-low	0.03327930	-	2	11	1.115538
RURAL	H.SES	19-high	0.25964615		2	5	0.938701
		23-low	0.08734000		3	9	0.783614
	L. SES	20-high	-0.07395385		5	14	0.624751
		21-high	-0.40541538		7	24	0.696963
		22-high	0.71915556		1	1	0.736133
		24-low	-0.17881034		5	20	0.875651
		25-low	-0.20271667		6	21	1.004780

Note: Higher score denotes higher student perceived emphasis placed upon academic achievement norms within the social system of the school.

[a] Lower achieving schools with more positive student perceived academic norms.

TABLE 28.--Mean School Factor Scores for Teacher Present Evaluations-Expectations

		Ach.	Score	Match High-low	Rank Strata	Rank Sample	Standard Deviation
WHITE	H. SES	01-high	-0.00259167	+	5	12	0.786157
		02-low	-0.20301668	-	6	15	0.785913
		03-high	0.69654583	+	2	4	0.843330
		04-low	-0.61818667	-	8	19	0.416136
		05-high	1.10103333	+	1	2	0.284116
		06-low	-1.08416667	-	10	23	1.717585
	L. SES	07-high	0.09166666	+	4	11	0.824991
		08-low	-0.30536667	-	7	17	1.646737
		09-high	0.39995000	+	3	9	0.493972
		10-low	-1.08380000	-	9	22	0.859416
BLACK	H. SES	11-high	0.43373333	+	1	8	0.322393
		12-low	-0.19706667	-	3	14	1.095569
		14-low	-1.20560000		7	24	0.860237
	L. SES	15-high	-0.85885000	+	5	20	0.564901
		16-low	-1.07266667	-	6	21	1.595785
		17-high	-0.43706667	-	4	18	0.596786
		18-low[a]	-0.13277778	+	2	13	0.536169
RURAL	H.SES	19-high	0.20428333		6	10	0.666448
		23-low	0.57276666		3	5	1.552743
	L. SES	20-high	0.84959333		2	3	0.553743
		21-high	1.11063333		1	1	0.000000
		22-high	0.43443333		5	7	0.907218
		24-low[a]	0.44203333		4	6	1.676409
		25-low	-0.21716667		7	16	0.000000

Note: Higher score (higher rank) denotes a more positive teacher perception of the present evaluation-expectations held within the social system of the school.

[a] Lower achieving school with a more positive present evaluation-expectation and higher achieving schools with a more negative present evaluation-expectation.

TABLE 29.--Mean School Factor Scores for Teacher Future Evaluations-Expectations

		Ach.	Score	Match High-Low	Rank Strata	Rank Sample	Deviation
WHITE	H. SES	01-high	1.50420000	+	1	1	1.268997
		02-low	0.07337400	-	7	13	0.194384
		03-high	0.89955000	+	4	8	0.682302
		04-low	0.59471000	-	5	9	0.342074
		05-high	0.41610000	+	6	11	0.097227
		06-low	-0.73288333	-	9	23	0.231147
	L. SES	07-high	0.92735000	+	3	7	0.556772
		08-low	-0.66485000	-	8	21	1.159188
		09-high	0.94825000	+	2	6	0.622175
		10-low	-1.08455000	-	10	24	0.438091
BLACK	H. SES	11-high	1.28567857	+	2	3	0.721990
		12-low	0.46161667	-	4	10	0.810660
		14-low[a]	1.18541667		3	4	1.414844
	L. SES	15-high	0.30006667	+	5	12	0.668956
		16-low	-0.08840000	-	7	17	0.572044
		17-high	1.34951667	+	1	2	0.971269
		18-low	-0.00910556	-	6	15	1.398623
RURAL	H.SES	19-high	-0.03430000		3	16	0.082378
		23-low[a]	0.00628333		2	14	1.591184
	L. SES	20-high[a]	-0.52725000		6	20	1.591184
		21-high[a]	-0.70475000		7	22	0.000000
		22-high	1.05975000		1	5	0.392727
		24-low[a]	-0.27545000		4	18	0.027436
		25-low	-0.48015000		5	19	0.000000

Note: Higher score denotes a more positive teacher perception of the future evaluations-expectations held within the social system of the school.

[a] Lower achieving school with a more positive future evaluation-expectation, and higher achieving schools with a more negative evaluation-expectation for the future.

TABLE 30.--Mean School Factor Scores for Teacher Perceived Parent Student Push for Educational Achievement

		Ach.	Score	Match High-Low	Rank Strata	Rank Sample	Standard Deviation
WHITE		01-high	-0.39652500	+	8	19	0.695990
		02-low	-0.67242500	-	9	20	0.532191
	H. SES	03-high	0.21697500	-	3	10	0.568426
		04-low[a]	0.26760000	+	2	8	0.915565
		05-high	-0.18460000	+	7	17	0.335027
		06-low	-0.87286667	-	10	22	1.131568
	L. SES	07-high	0.08736667	-	5	13	1.034206
		08-low[a]	0.46186667	+	1	7	0.694474
		09-high	0.09770000	+	4	12	0.615545
		10-low	-0.14253333	-	6	16	2.568311
BLACK	H. SES	11-high	0.25070000	+	3	9	0.420643
		12-low	-0.10820833	-	6	15	1.081128
		14-low	0.17583333		4	11	1.076698
	L. SES	15-high	-0.74325000	-	7	21	1.091740
		16-low[a]	-0.05420000	+	5	14	1.632926
		17-high	1.06756667	+	1	2	0.251991
		18-low	0.53056667	-	2	6	0.885619
RURAL	H.SES	19-high	1.10315000		1	1	1.184050
		23-low	-1.35263333		7	23	0.463563
	L. SES	20-high	0.60750000		2	3	0.080610
		21-high	0.60560000		3	4	0.000000
		22-high	-0.23435000		5	18	0.991152
		24-low	-0.99245000		6	23	1.447235
		25-low[a]	0.58210000		4	5	0.000000

Note: Higher score denotes a more positive teacher perceived parent-student push for educational achievement.

[a] Lower achieving school with a more positive teacher perceived parents and students desire for educational achievement.

TABLE 31.--Mean School Factor Scores for Teacher Reported Push of Individual Students

		Ach.	Score	Match High-low	Rank Strata	Rank Sample	Standard Deviation
WHITE	H. SES	01-high	-0.16175000	-	3	13	1.358140
		02-low	0.32082500	+	1	5	0.556434
		03-high	-0.63567500	-	6	16	0.500162
		04-low	-0.41466000	+	5	15	0.783348
		05-high	-1.09960000	-	9	20	0.240841
		06-low	-0.18760000	+	4	14	0.390176
	L. SES	07-high	-1.17130000	-	10	22	1.371315
		08-low	-0.23526667	+	7	17	0.996576
		09-high	-0.67023333	-	8	18	0.722221
		10-low	-0.66873333	+	7	17	0.996576
BLACK	H. SES	11-high	0.10400000	-	7	12	0.659424
		12-low	0.49640833	+	4	4	0.866063
		14-low	0.50786667		3	3	0.780008
	L. SES	15-high	0.30886667	+	5	6	0.589202
		16-low[a]	0.11577500	-	6	11	0.723583
		17-high	0.72436667	-	2	2	0.498157
		18-low	1.21187778	+	1	1	1.269075
RURAL	H. SES	19-high	-0.85395000		4	19	0.229315
		23-low	0.25010000		1	7	0.272493
		20-high	-1.42395000		7	24	0.410334
	L. SES	21-high	-1.26610000		6	23	0.000000
		22-high	0,12240000		3	10	0.593545
		24-low	0.22550000		2	9	0.752079
		25-low[a]	-1.10880000		5	21	0.000000

Note: Higher Score denotes more perceived teacher reported push of individual students.

[a] Lower achieving school with less perceived teacher need to push students.

TABLE 32.--Mean School Factor Scores for Teacher Reported Feelings of Job Satisfaction

		Ach.	Score	Match High-low	Rank Strata	Rank Sample	Standard Deviation
WHITE	H. SES	01-high	0.79086667	+	3	6	0.475346
		02-low	0.57154167	-	5	8	0.444558
		03-high	0.46991667	-	6	9	0.429900
		04-low[a]	0.64390667	+	4	7	1.347633
		05-high	1.39246667	-	2	3	0.453680
		06-low[a]	1.60960000	+	1	1	0.308015
	L. SES	07-high	-0.06060000	-	9	17	1.103096
		08-low[a]	0.01796667	+	8	15	0.425664
		09-high	0.30313334	+	7	12	0.615008
		10-low	-0.46996666	-	10	20	1.542970
BLACK	H. SES	11-high	0.30430953	+	4	11	0.470030
		12-low	-0.23369166	-	6	19	0.685754
		14-low	-.00553334		5	16	0.834894
	L. SES	15-high	-0.57123333	-	7	21	1.120243
		16-low[a]	1.24131667	+	1	4	1.371877
		17-high	0.96053334	+	2	5	0.563878
		18-low	0.31178889	-	3	10	1.124375
RURAL	H.SES	19-high	1.55021667		1	2	0.685540
		23-low	-1.07890000		6	23	0.262275
	L. SES	20-high[a]	-0.14668333		4	18	2.136947
		21-high	0.15256667		2	13	0.000000
		22-high[a]	-1.06513333		5	22	1.403748
		24-low	0.05566667		3	14	0.083580
		25-low	-1.37263333		7	24	0.000000

Note: Higher score denotes higher reported teacher satisfaction with school and teaching.

[a] Lower achieving school with a higher reported teacher sense of satisfaction with teaching, or a high achieving school with low teacher satisfaction.

TABLE 33.--Mean School Factor Scores for Teacher Perception of Student Academic Improvability

		Ach.	Score	Match High-low	Rank Strata	Rank Sample	Standard Deviation
WHITE	H. SES	01-high	-0.55945000	+	6	17	1.032729
		02-low	-0.70070000	-	7	19	0.742370
		03-high	-0.85606250	-	9	21	0.738001
		04-low[a]	-0.46115500	+	5	15	0.563861
		05-high	-0.89297500	-	10	23	0.154856
		06-low[a]	-0.85224167	+	8	20	0.812435
	L. SES	07-high	-0.16904167	-	3	11	0.281426
		08-low[a]	-0.10960833	+	2	10	1.029831
		09-high	-0.10599167	+	1	9	0.686005
		10-low	-0.38224167	-	4	14	0.622914
BLACK	H. SES	11-high	0.05455357	+	2	6	0.349668
		12-low	-1.37070000	-	7	24	0.808881
		14-low[a]	0.04169167		3	7	0.589057
	L. SES	15-high	-0.25034167	+	5	12	1.129803
		16-low	-0.87682500	-	6	22	2.760540
		17-high	0.59069167	+	1	3	0.802456
		18-low	0.02002500	-	4	8	1.061096
RURAL	H.SES	19-high	0.05612500		4	5	0.798889
		23-low[a]	0.81532500		2	2	0.060819
	L. SES	20-high	0.42752500		3	4	0.460751
		21-high	0.98152500		1	1	0.000000
		22-high	-0.51507500		6	16	0.450710
		24-low[a]	-0.32997500		5	13	0.877661
		25-low	-0.68917500		7	18	0.000000

Note: Higher score denotes the perception of teachers that students and their teachers believe that student background does not determine future academic success.

[a] Lower achieving school where teachers perceive that students and teachers believe that it will be more difficult for students to improve upon previous work.

APPENDIX F

Scale Questions

REPORTED STUDENT PRESS FOR COMPETITION OR INDIVIDUAL PERFORMANCE SCALE

(Student Press Competition)

How many students in this school try hard to get a good grade on their weekly tests?

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How many students in this school will work hard to get a better grade on the weekly tests than their friends do?

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How many students in this school don't care if they get bad grades?

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

How many students in this school do more studying for weekly tests than they have to?

Almost all of the students ..... 1.
Most of the students ..... 2.
Half of the students ..... 3.
Some of the students ..... 4.
Almost none of the students ..... 5.

IMPORTANCE OF STUDENT SELF-IDENTITY OR ROLE SCALE

If the teacher that you like the best told you that you were a poor student how would you feel?

I'd feel very bad ..... 1.
I'd feel somewhat bad ..... 2.
It wouldn't bother me very much ..... 3.
It wouldn't bother me at all ..... 4.

How important is it to you to be a good student?

It's the most important thing I can do ..... 1.
It's important, but other things are just as important..... 2.
It's important, but other things are more important ..... 3.
It's not very important ..... 4.

If your parents told you that you were a poor student, how would you feel?

I'd feel very bad ..... 1.
I'd feel somewhat bad ..... 2.
It wouldn't bother me very much ..... 3.
It wouldn't bother me at all ..... 4.

If your best friend told you that you were a poor student, how would you feel?

I'd feel very bad ..... 1.
I'd feel somewhat bad ..... 2.
It wouldn't bother me very much ..... 3.
It wouldn't bother me at all ..... 4.

ACADEMIC NORMS OF SCHOOL SCALE

How do you think most of the teachers in this school react when one of the students does a bad job on school work?

They feel badly and want to help him (her) do better ..... 1.
They feel badly, but don't really help him (her) ..... 2.
They get mad and tell him (her) to start working harder ..... 3.
They get mad but don't say anything ..... 4.
They really don't care ..... 5.

What do you think most students say when a student has done good or better than he usually does in his school work?

He was just lucky, he won't do that good next time ..... 1.
Anyone could do it if they studied ..... 2.
I wish I could do as well as he did ..... 3.
I'm glad for him I hope he does as well next time ..... 4.

How important do most of the students in this class feel it is to do well in school work?

Almost everybody thinks it is the most important thing you can do. ..... 1.
Most students think it is quite important to do well ..... 2.
Doing well in school work is a good thing but other things are important too. ..... 3.
Most students don't seem to care how well they do, but it's okay for others to do well. ..... 4.
Most students don't seem to care how good they do, but they don't like other students to do good. ..... 5.

How important do you think most of the students in this school feel it is to do well in school work?

Almost everybody thinks it is the most important thing you can do. ..... 1.
Most students think it is quite important to do well ..... 2.
Doing well in school work is a good thing but other things are important too. ..... 3.
Most students don't seem to care how well they do, but it's okay for others to do well. ..... 4.
Most students don't seem to care how good they do, but they don't like other students to do good. ..... 5.

How do you think most of the students in this class react when one of you does a bad job on school work?

They feel badly and want to help him (her) do better ..... 1.
They feel sorry, but don't say anything ..... 2.
They really don't care ..... 3.
They are secretly happy that it happened ..... 4.

SENSE OF CONTROL SCALE

People like me will not have much of a chance to do what we want to in life.

Strongly agree ..... 1.
Agree ..... 2.
Disagree ..... 3.
Strongly disagree ..... 4.

People like me will *never* do well in school even though we try hard.

Strongly agree ..... 1.
Agree ..... 2.
Disagree ..... 3.
Strongly disagree ..... 4.

I can do well in school if I work hard.

Strongly agree ..... 1.
Agree ..... 2.
Disagree ..... 3.
Strongly disagree ..... 4.

In this school, students like me don't have any luck.

Strongly agree ..... 1.
Agree ..... 2.
Disagree ..... 3.
Strongly disagree ..... 4.

You have to be lucky to get good grades in this school.

Strongly agree ..... 1.
Agree ..... 2.
Disagree ..... 3.
Strongly disagree ..... 4.

SELF-CONCEPT OF ACADEMIC ABILITY SCALE

Think of your friends. Do you think you can do school work better, the same, or poorer than your friends?

Better ..... 1.
The same ..... 2.
Poorer ..... 3.

Think of the students in your class. Do you think you can do school work better, the same, or poorer than the students in your class?

Better ..... 1.
The same ..... 2.
Poorer ..... 3.

When you finish high school, do you think you will be one of the best students, about the same as most of the students, or below most of the students?

One of the best ..... 1.
About the same as most of the students ..... 2.
Below most of the students..... 3.

Do you think you could finish college?

Yes, with no difficulty at all ..... 1.
Yes, as long as I work hard ..... 2.
Yes, but I will probably have a lot of difficulty ..... 3.
No, it will be too difficult ..... 4.

If you went to college, do you think you would be one of the best students, about the same as most of the students, or below most of the students?

One of the best ..... 1.
About the same as most of the students ..... 2.
Below most of the students..... 3.

If you want to be a doctor or a teacher, you need more than 4 years of college. Do you think you could do that?

Yes, with no difficulty at all ..... 1.
Yes, as long as I work hard ..... 2.
Yes, but I will probably have a lot of difficulty ..... 3.
No, it will be too difficult ..... 4.

Forget how your teachers mark your work. How good do you think your own work is?

Excellent	..... 1.
Good	..... 2.
About the same as most of the students	..... 3.
Below most of the students	..... 4.
Poor	..... 5.

What marks do you think you really can get if you try?

Mostly A's	..... 1.
Mostly B's	..... 2.
Mostly C's	..... 3.
Mostly D's	..... 4.
Mostly E's	..... 5.

PERCEIVED FRIEND EXPECTATIONS AND EVALUATIONS SCALE

How far do you think your best friend believes you will go in school?

Finish grade school ..... 1.
Go to high school for a while ..... 2.
Go to college for a while ..... 3.
Finish college ..... 4.

How good a student does your best friend expect you to be in school?

One of the best ..... 1.
Better than most of the students..... 2.
Same as most students ..... 3.
Not as good as most students ..... 4.
He doesn't really care ..... 5.

Think of your best friend. Would your best friend say you can do school work better, the same, or poorer than other people your age?

Better ..... 1.
The same ..... 2.
Poorer ..... 3.

Would your best friend say that your grades would be with the best, same as most, or below most of the students when you graduate from high school?

With the best ..... 1.
Same as most ..... 2.
Below most ..... 3.

Does your best friend think you could finish college?

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

Remember you need more than four years of college to be a teacher or doctor. Does your best friend think you could do that?

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

What grades does your best friend think you can get?

Mostly A's	..... 1.
Mostly B's	..... 2.
Mostly C's	..... 3.
Mostly D's	..... 4.
Mostly E's	..... 5.

PERCEIVED TEACHER EXPECTATIONS AND EVALUATIONS SCALE

How far do you think the teacher you like the best believes you will go in school?

Finish grade school ..... 1.
Go to high school for a while ..... 2.
Finish high school ..... 3.
Go to college for a while ..... 4.
Finish college ..... 5.

How good of a student does the teacher you like the best expect you to be in school?

One of the best ..... 1.
Better than most of the students..... 2.
Same as most students ..... 3.
Not as good as most students ..... 4.
She doesn't really care ..... 5.

Think of your teacher. Would your teacher say you can do school work better, the same, or poorer than other people your age?

Better ..... 1.
Same as most ..... 2.
Poorer ..... 3.

Would your teacher say that your grades would be with the best, same as most, or below most of the students when you graduate from high school?

With the best ..... 1.
Same as most ..... 2.
Below most ..... 3.

Does your teacher think you could finish college?

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

Remember you need more than four years of college to be a teacher or doctor. Does your teacher think you could do that?

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

What grades does your teacher think you can get?

Mostly A's	..... 1.
Mostly B's	..... 2.
Mostly C's	..... 3.
Mostly D's	..... 4.
Mostly E's	..... 5.

PERCEIVED PARENT EXPECTATIONS AND EVALUATIONS SCALE

How far do you think your parents believe you will go in school?

Finish grade school ..... 1.
Go to high school for a while ..... 2.
Finish high school ..... 3.
Go to college for a while ..... 4.
Finish college ..... 5.

How good of a student do your parents expect you to be in school?

One of the best ..... 1.
Better than most of the students ..... 2.
Same as most of the students ..... 3.
Not as good as most of the students ..... 4.
They don't really care ..... 5.

Think of your mother and father. Do your mother and father say you can do school work better, the same, or poorer than your friends?

Better ..... 1.
Same as most ..... 2.
Poorer ..... 3.

Would your mother and father say that your grades would be with the best, same as most, or below most of the students when you finish high school?

The best ..... 1.
Same as most ..... 2.
Below most ..... 3.

Do they think you could finish college?

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

Remember, you need more than four years of college to be a teacher or doctor. Do your mother and father think you could do that?

Yes ..... 1.
Maybe ..... 2.
No ..... 3.

What grades do your mother and father think you can get?

Mostly A's	..... 1.
Mostly B's	..... 2.
Mostly C's	..... 3.
Mostly D's	..... 4.
Mostly E's	..... 5.

PERCEIVED PRINCIPAL EXPECTATIONS AND EVALUATIONS SCALE

How many students in this school do you think the principal believes can get high grades?

Almost all of the students	..... 1.
Most of the students	..... 2.
Half of the students	..... 3.
Some of the students	..... 4.
Almost none of the students	..... 5.

How do you think your principal would grade the work of the students in this school, compared to other schools?

Would grade it much better	..... 1.
Would grade it somewhat better	..... 2.
Would grade it the same	..... 3.
Would grade it somewhat lower	..... 4.
Would grade it much lower	..... 5.

How many of the students in this school do you think the principal believes will finish high school?

Almost all of the students	..... 1.
Most of the students	..... 2.
Half of the students	..... 3.
Some of the students	..... 4.
Almost none of the students	..... 5.

How many of the students in this school do you think the principal believes will go to college?

Almost all of the students	..... 1.
Most of the students	..... 2.
Half of the students	..... 3.
Some of the students	..... 4.
Almost none of the students	..... 5.

How many of the students in this school do you think the principal believes will finish college?

Almost all of the students	..... 1.
Most of the students	..... 2.
Half of the students	..... 3.
Some of the students	..... 4.
Almost none of the students	..... 5.

REPORTED TEACHER PRESS FOR COMPETITION OR INDIVIDUAL PERFORMANCE SCALE

Of the teachers that you know in this school how many tell students to try hard to do better on tests?

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

How many teachers in this school tell students to try and get better grades than their classmates?

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers .... 5.

Of the teachers that you know in this school how many tell students to do extra work so that they can get better grades?

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

If the teachers in this school think a student can't do good work, how many will try to make him work hard anyway?

Almost all of the teachers ..... 1.
Most of the teachers ..... 2.
Half of the teachers ..... 3.
Some of the teachers ..... 4.
Almost none of the teachers ..... 5.

APPENDIX G

Hoyt's Analysis of Variance

TABLE 34. Hoyt's Analysis of Variance

Variables Variables	Reliability Coefficients
Reported Student Press for Competition	.6956
Reported Teacher Press for Competition	.5901
Importance of Student Self-Identity	.6884
Academic Norms of School	.5300
Sense of Control	.6486
Perceived Friend Expectations & Evaluations	.7160
Perceived Teacher Expectations & Evaluations	.6581
Perceived Principal Expectations & Evaluations	.7684
Perceived Parent Expectations & Evaluations	.6687
Self-Concept of Academic Ability	.7543